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The
University of Minnesota
Bulletin

General Information

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UNIVERSITY OF ILLINOIS
UNIVERSITY OF ILLINOIS

1909-1910



Volume XII

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The University catalogues are published by authority of the Board of Regents, as a regular series of bulletins. One bulletin for each college is published every year and in addition a bulletin of general information outlining the entrance requirements of all colleges of the University, and embodying such items as University equipment, organizations and publications, expenses of students, loan and trust funds, scholarships, prizes, etc. Bulletins will be sent gratuitously, postage paid, to all persons who apply for them. In calling for bulletins, the college or school of the University concerning which information is desired should be stated. Address,

THE REGISTRAR,

The University of Minnesota,

Minneapolis, Minnesota.



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DELAWARE STREET

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PROSPECT ST. PLEASANT ST. STATE ST. CHURCH ST. UNION ST. HARVARD ST. WALNUT ST.

MISISSIPPI RIVER

GREENHOUSE

S.C.A. YM.C.A.

LAW SCHOOL MINES

ALICE SHEVLEN HALL

LIBRARY

PILLSBURY MONUMENT

PHYSICS

FOLWELL HALL

CHEMISTRY

PILLSBURY HALL

ELECTRICAL

MEDICAL SCIENCES

MEDICAL CHEMISTRY

MEDICAL MECHANICAL ENGINEERING

PUBLIC HEALTH AND PATHOLOGY

ANATOMY

MILLARD HALL

ANUSIORY

NORTHROP FIELD

ORE TESTING WORKS

OBSERVATORY

MECHANICAL ARTS

SOLDIERS MONUMENT

MINNEAPOLIS AND ST. PAUL INTERURBAN

N.P.R.V.

Q.N.R.T.

UNIVERSITY
OF
MINNESOTA
MINNEAPOLIS

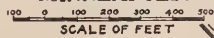


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CALENDAR FOR 1909-1910

1909

1910

JULY						
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University Calendar

1909-1910

THE UNIVERSITY YEAR

The University year covers a period of thirty-eight weeks beginning on the second Tuesday in September. Commencement day is always the second Thursday in June.

1909

Sept. 7	Tuesday	Registration begins
Sept.7-12	Week	Entrance examinations, condition examinations, registration.
Sept. 14	Tuesday	First semester begins
Oct. 4	Monday	University Council meeting
Oct. 4	Monday	School of Agriculture session begins
Oct. 7	Thursday	Board of Regents meeting
Nov. 25	Thursday	Thanksgiving Day, recess three days
Dec. 6	Monday	University Council meeting
Dec. 14	Tuesday	Board of Regents meeting
Dec. 18	Friday	Holiday recess begins 5:40 P. M.

1910

Jan. 4	Tuesday	Holiday recess ends 8:30 A. M.
Jan. 22	Saturday	Semester examinations begin
Jan. 29	Saturday	Semester examinations close
Jan. 31	Monday	Registration for second semester closes
Feb. 1	Tuesday	Second semester begins
Feb. 12	Saturday	Lincoln's birthday, holiday
Feb. 22	Tuesday	Washington's birthday, holiday
March 25	Friday	Good Friday, recess two days
April 4	Monday	University Council meeting
May 5	Thursday	Board of Regents meeting
May 30	Monday	Decoration Day, holiday
May 31	Tuesday	Semester examinations begin
June 4	Saturday	Semester examinations close
June 5	Sunday	Baccalaureate service
June 6	Monday	University Council meeting
June 6	Monday	Senior class exercises
June 7	Tuesday	Phi Beta Kappa address 8:00 P. M.
June 7	Tuesday	Senior Promenade 9:00 P. M.
June 8	Wednesday	Alumni Day
June 8	Wednesday	Board of Regents meeting
June 9	Thursday	Thirty-eighth annual commencement
June 10	Friday	Summer vacation begins

PROGRAM—ENTRANCE EXAMINATIONS
1909-10

Sept. 7	Tuesday	9 A. M.	Astronomy Botony Geology Chemistry Physiography Zoology
		2 P. M.	American Government History Political Economy Physics
Sept. 8	Wednesday	9 A. M.	English
		2 P. M.	German French Latin Scandinavian
Sept. 9	Thursday	9 A. M.	Elementary Algebra Commercial Geography
		2 P. M.	Higher Algebra
Sept. 10	Friday	9 A. M.	Plane Geometry
		2 P. M.	Solid Geometry

All candidates for examinations should report at the scheduled time in Room 13 Library Building.

The School Year for 1910-11 will begin Tuesday, September 13

The University

THE UNIVERSITY OF MINNESOTA comprises the following named schools, colleges and departments:

THE COLLEGE OF SCIENCE, LITERATURE AND THE ARTS

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS

THE DEPARTMENT OF AGRICULTURE, including—

THE COLLEGE OF AGRICULTURE

THE SCHOOL OF AGRICULTURE

SHORT COURSE FOR FARMERS

THE DAIRY SCHOOL

THE CROOKSTON SCHOOL OF AGRICULTURE

THE COLLEGE OF LAW

THE COLLEGE OF MEDICINE AND SURGERY

THE COLLEGE OF HOMEOPATHIC MEDICINE AND SURGERY

THE COLLEGE OF DENTISTRY

THE COLLEGE OF PHARMACY

THE SCHOOL OF MINES

THE SCHOOL OF ANALYTICAL AND APPLIED CHEMISTRY

THE COLLEGE OF EDUCATION

THE GRADUATE SCHOOL

The Regents of the University have entrusted to their charge:

THE EXPERIMENT STATIONS, including—

THE MAIN STATION AT ST. ANTHONY PARK

THE SUB-STATION AT CROOKSTON

THE SUB-STATION AT GRAND RAPIDS

THE GEOLOGICAL AND NATURAL HISTORY SURVEY

Bulletins of these schools, colleges and departments may be obtained upon application to the University Registrar.

Description of Departments

In the COLLEGE OF SCIENCE, LITERATURE AND THE ARTS, there is a four-year course of study leading to the degree of Bachelor of Arts. The work of the first two years is elective within certain limitations as to the range of subjects from which the electives may be chosen. The remaining work of the course is entirely elective, with the provision that a certain number of long courses be selected. The course is so elastic that it permits the student to make the general scope of his course classical, scientific or literary, to suit his individual purpose.

In this college are given also the two years of college work required for entrance to the College of Medicine and Surgery; the first two years of work of the six-year course in Science and Medicine, leading to the degrees of Bachelor of Science and Doctor of Medicine; the one year of college work required for entrance to the College of Law; and various non-professional subjects required in other schools and colleges of the University.

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS was founded "to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." It offers courses of study, of five years each, in civil, mechanical, electrical and municipal engineering, leading to the degrees of civil, mechanical or electrical engineer, the degree of Bachelor of Science being conferred at the end of the fourth year. This college also offers work in the Graduate School leading to the degree of Master of Science.

THE COLLEGE OF AGRICULTURE offers a four-year course in agriculture. The degree of Bachelor of Science, in Agriculture is conferred upon completion of the course. Students in this College may specialize along the line of forestry or of home economics and secure the degree, Bachelor of Science (in Forestry, or in Home Economics).

THE SCHOOL OF AGRICULTURE offers a three-year course of study and is a training school for practical farm life and in domestic economy. The College of Agriculture is open to graduates of this School who have completed the fourth year of work required for admission to the College.

THE DAIRY SCHOOL offers practical instruction in dairying, specially designed for those who are actually engaged in the manufacture of butter and cheese.

THE SHORT COURSE FOR FARMERS is designed to be of the greatest help possible to those actually engaged in farming.

THE CROOKSTON SCHOOL OF AGRICULTURE offers a course of study quite similar to that given in the School of Agriculture.

THE COLLEGE OF LAW aims to educate its students by means of the study of jurisprudence, familiarizing them with the fundamental principles of positive law. Education, and not simply information, is the prime object. The power to think clearly, to reason cogently, to investigate thoroly, to generalize clearly, and to express thoughts accurately are the prime objects of legal education. The method of work generally pursued consists in the study of reported cases, preparing written analysis of the same, and such lectures as are necessary to give the student a symmetrical view of the science of jurisprudence. The art of practice is taught so far as possible in the law school. A system of courts embracing a court of the Justice of the Peace, and the District and Supreme Courts of the state is organized and maintained. The students pass through each of these courts in order. Students familiarize themselves with the rules of the District and Supreme courts of the state. Jury trials are conducted throughout the senior year. Appeals, motions for new trials, arguments, and all the other points of practice in the courts of the state are considered. The degree of Bachelor of Laws is granted upon the completion of the three year day course, or the four year evening course, which degree entitles the holder to admission to the bar without examination.

THE COLLEGE OF MEDICINE AND SURGERY was established as such in 1888, the University Medical Department having been established in 1884 to examine students and confer degrees. The College provides now the only medical teaching in Minnesota, having taken over the Medical Department and students of Hamline University in 1908.

The requirements for entrance are a four year high school course, including two years of Latin; and two years of college work equivalent to the academic work of this University and including at least one year each of physics, inorganic chemistry, qualitative analysis, biology and language. Four years of thirty-six full weeks of laboratory, recitatorial, didactic and clinical work are required in medicine.

The college is housed on the campus in six commodious modern buildings. The University owns and controls a dispensary near by and controls the St. Paul dispensary. The Elliott Memorial Hospital is in process of organization on the campus.

The Twin Cities' population of 550,000, with hospitals and dispensaries are used for teaching.

The following courses of study are offered:

1. M. D. Course.—Four years of graded study.
2. Combined B. S., M. D. Course.—Two years of required courses in the academic department, in biology, botany, mathematics, language

and economics, followed by four years of medicine, permit of the double degree in six years.

3. Combined B. A., M. D. Course.—Students presenting three years of college work in the academic department, which include the B. A. degree at the end of their required entrance studies, may take the first year in medicine.

Similar affiliations with outside colleges have been made whereby the B. A. degree is conferred by the outside colleges.

4. Training School for Nurses.—(See school bulletin).

5. Embalming School.—(See special announcement).

6. Graduate and research work is offered to qualified students:

THE COLLEGE OF HOMEOPATHIC MEDICINE AND SURGERY offers two courses of study: A four year course of nine months each leading to the degree of M. D., requiring two years of collegiate work for admission; a six year course, the first two years in the College of Science, Literature and the Arts and the last four years in the College of Homeopathic Medicine and Surgery—at the completion of four year's work the degree of B. S. is conferred, and, on completion of the six years, the degree of M. D.—requiring the high school diploma for admission.

THE COLLEGE OF DENTISTRY offers a three-year course of study, of nine months each. Upon completion of the prescribed course the degree of Doctor of Dental Surgery is conferred.

THE COLLEGE OF PHARMACY was organized in 1891 upon request of the Minnesota State Pharmaceutical Association. In the organization and conduct of the college, the Board of Regents and the faculty have had and have the co-operation of the pharmacists of the Northwest. The college is of the University grade and maintains a high standard of entrance and graduation requirements. Every effort is made to comply with the demands of the pharmaceutical profession of the Northwest and elsewhere. The college offers a regular course extending over two or three years leading to the degree Bachelor of Pharmacy, and two post-graduate courses, the first requiring at least one additional year of resident work and leading to the degree Master of Pharmacy, and the second requiring one or two additional years of work and leading to the degree Doctor of Pharmacy. It is now contemplated to add a four-year course to include somewhat more than is now included in the regular two-year course and about two years of academic work. This course will lead to the degree Bachelor of Science in Pharmacy, and will in all respects be at least the equal of similar courses given in other University colleges of pharmacy. The course will probably be inaugurated in 1910. The Board of Regents have also authorized a course somewhat lower than the regular course now given to comply however with the requirements of the American Conference of

Pharmaceutical Faculties. This course probably will not begin until 1911 and will probably not lead to any degree or to the degree Pharmaceutical Graduate.

THE SCHOOL OF MINES was established in 1889. Its buildings and laboratories are located on the grounds of the University of Minnesota. Students of the School of Mines have, therefore, all the opportunities afforded by a large university. Two regular courses of study are offered, namely, mining engineering and metallurgy, leading to the degrees of Engineer of Mines (E. M.) and Metallurgical Engineer (Met. E.), respectively. The courses in the school are designed with a view of preparing men to enter their profession with a thorough grounding in mathematics, in the sciences, and in the fundamental principles of mining engineering and metallurgy. The technical courses consist of lecture work in mining, metallurgy and allied subjects supplemented by laboratory work in assaying, chemistry, ore dressing and metallurgy; field work in plane and underground surveying; actual practical mining and metallurgical work in Minnesota and western mining centers. A system of apprenticeship during summer vacations has been inaugurated. This work has become part of the curriculum and is required of all students who are candidates for degrees.

Minnesota's enormous iron ore production continually brings before the public the necessity for trained men to aid in the development of the country's mineral resources. The state has developed its School of Mines with this end in view.

THE COLLEGE OF EDUCATION offers a practical and a theoretical training for prospective high school teachers and principals, for principals of elementary schools, for supervisors of special studies, and for superintendents of school systems.

Students are admitted to the college only after the completion of at least two full years of college work, during which time they should have pursued at least one course in general psychology, and prospective high school teachers should have given especial attention to one or more of the subjects which they expect to teach. The two years' course of study, beginning with the junior year, leads to the degree of Bachelor of Arts in Education. Preparation for teaching is planned to include a thorough grounding in the correct use of English, an adequate training in general and in educational psychology, in the history and organization of schools, in educational theory, and in the practice of teaching; and also, quite aside from the liberal training of the regular college course, specific preparation in both the subject matter and the methods of those subjects in the secondary curriculum which each candidate proposes to teach. A third year leads to the degree of master of arts, including advanced studies in

education and philosophy, and in one or more of the subjects of the secondary curriculum, at the option of the candidate.

In addition to the ordinary academic and professional studies connected with the training of the teacher, the college offers an opportunity for observation and practice teaching under supervision, as well as special facilities in voice culture, public school music, and physical culture, together with elementary and advanced courses in drawing, domestic art and domestic science, manual training and business education—those specialized forms of the secondary curriculum which are being introduced so rapidly into the public high schools of Minnesota.

THE SCHOOL OF ANALYTICAL AND APPLIED CHEMISTRY offers three courses. Two of these, the Analytical and the five year course in Arts and Chemistry, are designed for those who wish to become teachers of chemistry, analysts and investigators. The four year Analytical course leads to the degree of Bachelor of Science in Chemistry, while the five year course leads to the degree of Bachelor of Arts after four years and Bachelor of Science in Chemistry at the end of the fifth.

The third or Applied course extends over five years, leading to the degree of Bachelor of Arts at the end of four years and Chemical Engineer at the end of the fifth. These courses aim to give the student a broad foundation in chemistry and some of the allied sciences.

The two buildings occupied by the school contain six large laboratories and about twenty smaller ones well equipped for carrying on a wide range of work.

THE GRADUATE SCHOOL gathers into a single organization and unites for the purposes of administration all the activities of the University in all its schools and colleges in so far as they relate to advanced instruction offered for the second or higher degrees, viz.: Master of Arts and Doctor of Philosophy conferred for advanced, non-technical study; Master of Science and Doctor of Science for technical study; Master of Laws and Doctor of Civil Law for advanced legal studies. The privileges of this school are in general open to all Bachelors of Arts, of Science, pure and applied, and of Laws, from reputable colleges and universities having courses substantially equivalent to those at this University.

THE UNIVERSITY SUMMER SCHOOL is organized for a six weeks' session in June and July under the direction of the State Department of Public Instruction. In the elementary section courses are given for teachers in all the common school branches and in preparation for the state teacher's certificates. In the college section courses are given for high school teachers and in preparation for the state professional certificate. Students who desire University entrance credits and credits toward the bachelor's degree may secure these by pursuing not more than two full courses at each session.

SPECIAL COURSES. In practically all of the colleges, students of mature age and adequate preparation are permitted to pursue, under the direction of the faculty, one or two distinct lines of study.

EXTENSION LECTURES. Professors in the University are prepared to give a limited number of extension lectures from time to time. For subjects, speakers, terms and dates, application should be made to the chairman of the committee on University Extension.

The Board of Regents

CYRUS NORTHROP, LL.D., MINNEAPOLIS	<i>Ex-Officio</i>
The President of the University	
The HON. JOHN LIND, MINNEAPOLIS	1914
The President of the Board	
The HON. JOHN A. JOHNSON, ST. PETER	<i>Ex-Officio</i>
The Governor of the State	
The HON. C. G. SCHULZ, ST. PAUL	<i>Ex-Officio</i>
The State Superintendent of Public Instruction	
The HON. THOMAS WILSON, ST. PAUL	1915
The HON. A. E. RICE, WILLMAR	1915
The HON. B. F. NELSON, MINNEAPOLIS	1910
The HON. PIERCE BUTLER, ST. PAUL	1910
The HON. CHARLES A. SMITH, MINNEAPOLIS	1910
The HON. S. M. OWEN, MINNEAPOLIS	1913
The HON. W. J. MAYO, ROCHESTER	1913
The HON. HENRY B. HOVLAND, DULUTH	1914

C. D. DECKER, MINNEAPOLIS,
Secretary of the Board

Executive Officers

THE UNIVERSITY

CYRUS NORTHROP, LL. D., PRESIDENT
ERNEST B. PIERCE, B. A., REGISTRAR
JAMES T. GEROULD, B. A., LIBRARIAN
C. D. DECKER, PURCHASING AGENT
J. D. BREN, CASHIER

THE COLLEGES

JOHN F. DOWNEY, M.A., C. E., DEAN OF THE COLLEGE OF SCIENCE,
LITERATURE AND THE ARTS
FREDERICK S. JONES, M.A., DEAN OF THE COLLEGE OF ENGINEERING
AND THE MECHANIC ARTS
JOHN W. OLSEN, B.S., DEAN AND DIRECTOR OF THE DEPARTMENT OF
AGRICULTURE
WILLIAM S. PATTEE, LL.D., DEAN OF THE COLLEGE OF LAW
FRANK FAIRCHILD WESBROOK, M.A., M.D., C.M., DEAN OF THE
COLLEGE OF MEDICINE AND SURGERY
EUGENE L. MANN, B.A., M.D., DEAN OF THE COLLEGE OF HOMEO-
PATHIC MEDICINE AND SURGERY
ALFRED OWRE, D.M.D., M.D., DEAN OF THE COLLEGE OF DENTISTRY
FREDERICK J. WULLING, Phm.D., LL.M., DEAN OF THE COLLEGE OF
PHARMACY
WILLIAM R. APPLEBY, M.A., DEAN OF THE SCHOOL OF MINES
GEORGE B. FRANKFORTER, M.A., Ph.D., DEAN OF THE SCHOOL OF
CHEMISTRY
GEORGE F. JAMES, Ph.D., DEAN OF THE COLLEGE OF EDUCATION
HENRY T. EDDY, C.E., Ph.D., LL.D., DEAN OF THE GRADUATE SCHOOL

ADA L. COMSTOCK, M.A., DEAN OF WOMEN

The University Council

At the regular meeting of the Board of Regents of the University, May 31st, 1905, a University Council was established according to the following plan:

I. The name of the body shall be The University Council. It shall consist of the President of the University, the Deans of the various colleges and schools, one elected representative from each college or school for each 400 students or major fraction thereof, and one representative of the general alumni association.

II. The elected members shall serve for a period of one year. They shall be chosen from the various faculties at the time of the selection of standing committees. The representative of the general alumni association shall be chosen by that body at its annual meeting from among the alumni who are not members of the University.

III. The Council shall be authorized to—

a) Appoint the following committees or the faculty representation thereon:

The University auditing committee

The University press committee

The committee on athletics

The committee on University relations to other institutions of higher learning

The committee on health and sanitation

The committee on commencement and other University functions

The committee on catalogue, programs and courses of study

The committee on student entertainments and social affairs

And such other committees as the general University interests may require.

b) Receive reports from such committees and to make such recommendations as may be required.

c) Consider and act upon any matter of general University interest beyond the province of a single faculty which may be referred to it by the President of the University or any faculty.

IV. The Council shall hold stated meetings upon the first Monday of October, December, April and June, and such other meetings as the President of the University may call.

Representatives to the Council

The University

PRESIDENT CYRUS NORTHROP

The College of Science, Literature and the Arts

DEAN JOHN F. DOWNEY

PROFESSOR JOHN H. GRAY

PROFESSOR J. C. HUTCHINSON

PROFESSOR H. F. NACHTRIEB

PROFESSOR NORMAN WILDE

The College of Engineering and the Mechanic Arts

DEAN FREDERICK S. JONES

PROFESSOR GEORGE D. SHEPARDSON

The College and School of Agriculture

DEAN JOHN W. OLSEN

PROFESSOR HARRY SNYDER

PROFESSOR SAMUEL B. GREEN

The College of Law

DEAN WILLIAM S. PATTEE

PROFESSOR HENRY J. FLETCHER

The College of Medicine and Surgery

DEAN F. F. WESBROOK

PROFESSOR THOMAS G. LEE

The College of Homeopathic Medicine and Surgery

DEAN EUGENE L. MANN

The College of Dentistry

DEAN ALFRED OWRE

The College of Pharmacy

DEAN FREDERICK JOHN WULLING

The School of Mines

DEAN WILLIAM R. APPLEBY

The School of Chemistry

DEAN GEORGE B. FRANKPORTER

The College of Education

DEAN GEORGE F. JAMES

The Graduate School

DEAN HENRY T. EDDY

The Dean of Women

ADA L. COMSTOCK

The University Library

JAMES T. GEROULD

General Alumni Association

DAVID P. JONES

University Council Committees

The University Auditing Committee

PROFESSORS RASTALL, FLETCHER, SIGERFOOS, SPRINGER,
WASHBURN

The Committee on Athletics

PROFESSORS PAIGE, HARDING, D. P. JONES, LITZENBERG,
ROBINSON

The Committee on Grounds and Sanitation

PROFESSORS FLATHER, BASS, BRACKEN, FLETCHER, FRANKFORTER,
RANDALL, WESBROOK

The Committee on Catalogue, Programs and Courses of Study

PROFESSORS GRAY, FLETCHER, A. E. HAYNES, JOHNSTON, SNYDER,
E. B. PIERCE

The Press Committee

PROFESSORS SCHAPER, BEACH, CONSTANT, JOHNSTON, ROBINSON

The Committee on Commencement and other University Functions

PROFESSORS NACHTRIEB, JAMES, KIRCHNER, PATTEE, RANDALL,
SCHLENKER, DR. SCOTT, WILDE

The Committee on Student Entertainments and Social Affairs

PROFESSORS FRANKFORTER, BASS, CLEMENTS, COMSTOCK, COOKE,
OWRE, PIKE

The Committee on University Relations to other Institutions of Higher Learning

PROFESSORS DOWNEY, BOTHNE, EDDY, GRAY, GREEN, JAMES,
LEE

The Committee on University Extension and University Lectures

PROFESSORS WEST, HAECKER, JUERGENSEN, RANKIN, SHEPARDSON

The Committee on the Library

PROFESSORS EDDY, FLETCHER, F. S. JONES, LEE, REYNOLDS,
VAN BARNEVELD, WEST, J. T. GEROULD

Faculty

CYRUS NORTHROP, LL.D., President	519 Tenth Ave. S. E.
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- WARREN A. DENNIS, B.S., M.D. 657 Goodrich, Ave., St. Paul
Clinical Instructor in Surgery
- CHARLES F. DIGHT, M.D. Minneapolis
Instructor in Pharmacology
- C. F. DISEN, M.D. 2600 E. 22nd St.
Demonstrator of Anatomy
- J. M. DREW 1307 Chelmsford, St. St., Paul
Instructor in Blacksmithing and Poultry, Registrar of
the School of Agriculture.
- A. W. DUNNING, M.D. 807 Ashland, Ave., St. Paul
Clinical Instructor in Nervous and Mental Diseases
- J. L. EDMUNDS, B.S. in Agr. St. Anthony Park
Instructor in Animal Husbandry
- R. E. FARR, M.D. 2524 Clinton Ave.
Clinical Instructor in Surgery
- EDWARD FIDLAR, B.A., M.D. 425 12th Ave. S. E.
Junior Demonstrator of Pathology and Bacteriology
- OSCAR W. FIRKINS, M.A. 1528 4th St. S. E.
Instructor in English and Rhetoric
- HENRY J. FRANKLIN, Ph.D. 1472 Raymond Ave., St. Paul
Instructor in Entomology
- FRANCIS C. FRARY, M.S. 1307 6th St. S. E.
Instructor in Chemistry
- W. H. FRAZIER, B.S. 1155 Raymond Ave., St. Paul
Instructor in Agricultural Chemistry and Soils
- JAMES GILFILLAN, M.D. 287 So. Exchange St. St. Paul
Clinical Instructor in Medicine
- HALDOR B. GISLASON, B.A., LL.B. 217 Harvard St. S. E.
Instructor in Rhetoric
- H. S. GODFREY, D.M.D. 1117 Harmon Place
Instructor in Operative Dentistry
- JUDD GOODRICH, M.D. 300 Goodrich Ave., St. Paul
Clinical Instructor in Surgery
- ROBERT L. GREEN, D.D.S. 3210 15th Ave. S.
Instructor in Operative Dentistry
- C. P. GROUT, B.S. in Agr. St. Anthony Park
Instructor in Dairy Husbandry
- FRANK F. GROUT, B.S. 1202 7th. St. S. E.
Instructor in Geology and Mineralogy
- CHARLES A. GRIFFITH, D.D.S. 420 13th Ave. S. E.
Instructor in Operative Dentistry
- GEORGE D. HAGGARD, M.D. 2400 Chicago Ave.
Instructor in Physiology

- ARTHUR S. HAMILTON, B.S., M.D. 600 Washington Ave. S. E.
Instructor in Pathology of the Nervous System
- JOHN A. HANDY, Ph.C. 220 Harvard S. E.
Instructor in Chemistry
- W. F. HANDSCHIN St. Anthony Park
Instructor in Animal Husbandry
- EARLE R. HARE, B.S., M.D. 327 14th Ave. S. E.
Instructor in Anatomy
- MARY V. HARTZELL, D.M.D. 2508 Pillsbury Ave.
Instructor in Comparative Dental Anatomy
- ROWLAND HAYNES, M.A. 606 7th St. S. E.
Instructor in Psychology
- GEORGE D. HEAD, B.S., M.D. 56 Dell Place
Instructor in Clinical Microscopy
- A. C. HEATH, M.D. 516 Portland Ave., St. Paul
Clinical Instructor of Diseases of the Nose and Throat
- U. E. HEDDY, D.D.S. 710 21st Ave. S.
Instructor in Crown and Bridge Work
- P. A. HOFF, M.D. 225 Arundel Ave., St. Paul
Clinical Instructor in Medicine.
- CHARLES M. HOLT, B.A. Waverly Hotel
Instructor in Education
- OLAF HOVDA, B.A. 1519 7th St. S. E.
Instructor in Engineering Mathematics
- H. W. JONES, M.D. 2418 W. 22nd St.
Clinical Instructor in Nervous and Mental Diseases
- R. R. JONES, D.D.S. 4320 Upton Ave.
Instructor in Operative Dentistry
- LEULAH H. JUDSON, M.A. 1221 5th St. S. E.
Instructor in History
- A. R. KOHLER, B.S.A. 1455 No. Cleveland Ave., St. Paul
Instructor in Horticulture
- ALOIS F. KOVARIK, M.A. 1523 7th St. S. E.
Instructor in Physics
- W. F. LASBY, B.S., D.D.S. 602 Essex St. S. E.
Instructor in Prosthetic Dentistry
- ARTHUR A. LAW, M.D. 1912 Hennepin Ave.
Instructor in Operative Surgery
- HARRY C. LAWTON, D.D.S. 489 Grand Ave. St. Paul
Instructor in Prosthetic Dentistry and Dental Anatomy
- J. F. LEMSTROM, M.D. 115 N. 12th St.
Instructor in Histology and Embryology
- CHARLES N. McCLOUD, Phm.D., M.D. 965 Selby Ave., St. Paul
Lecturer on First Aids to the Injured

- JEANETTE M. MCLAREN, M.D. 441 Selby Ave., St. Paul
Clinical Instructor in Obstetrics
- J. S. MACNIE, M.D. 2113 Bryant Ave. S.
Clinical Instructor in Diseases of the Eye and Ear
- JAMES E. MANCHESTER, Sc.D. 405 Oak St. S. E.
Instructor in Mathematics
- HERMAN A. MAVES, D.D.S. 711 Douglas Ave.
Instructor in Operative Dentistry
- CARL M. MELOM, M.A. 506 15th Ave. S. E.
Instructor in French and Spanish
- MARTHA B. MOORHEAD, M.D. 914 2nd Ave. So.
Lecturer in Domestic Hygiene
- OSCAR B. NELSON, C.E. 1827 14th Ave, So.
Instructor in Civil Engineering
- WILLIAM B. NEWHALL, M.E. 2702 Humboldt Ave. So.
Instructor in Civil Engineering
- CHARLES W. NICHOLS, M.A. 313 8th Ave. S. E.
Instructor in Rhetoric
- WALLACE NOTESTEIN, Ph.D. 812 4th St. S. E.
Instructor in History
- OSCAR OWRE, M.D. 511 W. Franklin Ave.
Instructor in Oral Surgery
- E. H. PARKER, M.D. 1311 Yale Place
Clinical Instructor in Diseases of Nose and Throat
- PETER PETERSON 3709 Clinton Ave.
Instructor in Foundry Practice
- RAYMOND V. PHELAN, Ph.D. 1629 University Ave. S. E.
Instructor in Economics
- JAY N. PIKE, D.D.S. 1617 Franklin Ave.
Instructor in Orthodontia.
- C. E. PYLE, B.S., D.V.M. 2225 Langford Ave., St. Paul
Instructor in Domestic Bacteriology
- EDWARD QUIGLEY 2442 15th Ave. S.
Instructor in Forge Work
- WALTER R. RAMSEY, M.D. The Angus, St. Paul
Clinical Instructor in Diseases of Children
- JEAN RANKIN, M.A. 916 5th St. S. E.
Instructor in Education
- SOREN P. REES, B.S., M.D. 1721 James Ave. S.
Instructor in Physical Diagnosis and Clinical Medicine
- H. M. REID, D.D.S. 2014 Queen Ave. S.
Instructor in Prosthetic Dentistry
- WILLIAM H. RICHARDS 416 Havard St. S. E.
Instructor in Carpentry and Pattern Work

- HARRY P. RITCHIE, Ph.B., M.D. 46 Crocus Place, St. Paul
Clinical Instructor in Surgery
- H. E. ROBERTSON, B.A., M.D. 627 Oak St. S. E.
Demonstrator in Pathology
- H. B. ROE Agricultural College
Instructor in Mathematics
- BERT A. ROSE 41 S. 6th St.
Instructor of Cadet Band
- NORMAN W. ROSE, M.E. 406 Oak St. S. E.
Instructor in Drawing
- FRANK B. ROWLEY, B.S., M.E. 311 Havard St. S. E.
Instructor in Drawing
- A. G. RUGGLES, M.A. 1465 Raymond Ave., St. Paul
Instructor in Entomology
- WILLIAM T. RYAN, E.E. 1406 7th St. S. E.
Instructor in Electrical Engineering
- J. FRANCIS SCHEFCIK, B.S., Ph.G., M.D., C.M. 1400 Spruce Place
Instructor in Materia Medica
- JULIUS PARKER SEDGWICK, B.S., M.D. 2015 Kenwood Parkway
Instructor in Physiological Chemistry and Clinical
Assistant in Diseases of Children.
- W. D. SHELDON, M.D. 3233 Irving Ave. S.
Clinical Instructor in Medicine, and Instructor in Thera-
peutics
- JUNIATA SHEPPERD, M.A. Agricultural College
Instructor in Domestic Science
- S. CARL SHIPLEY, B.S., M.E. 209 State St. S. E.
Instructor in Machine Work
- CHARLES F. SHOOP, B.S. 1916 14th Ave. N.
Instructor in Mechanical Engineering
- ROYAL R. SHUMWAY, B.A. 716 12th Ave. S. E.
Instructor in Mathematics
- ANNA M. SMITH 1485 Raymond Ave., St. Paul
Librarian School of Agriculture
- CHARLES N. SPRATT, M.D. 1804 Park Ave.
Clinical Instructor in Diseases of the Eye and Ear
- EDITH STAPLES St. Anthony Park
Instructor in Domestic Art
- THOMAS W. STUMM, M.D. 394 Selby Ave. St. Paul
Clinical Instructor in Medicine
- SAMUEL E. SWEITZER, M.D. 1729 Irving Ave. S.
Clinical Instructor in Dermatology and Genito-Urinary
Diseases.

- C. C. TYRRELL, B.A., M.D., 2428 Central Ave.
 Prosector in Anatomy
- HENRY UBRICH 602 Buchanan St. S. E.
 Instructor in Carpentry
- HENRY L. ULRICH, M.D. 519 1st Ave. S.
 Assistant in Clinical Microscopy
- J. A. VYE 1449 Cleveland Ave. N., St. Paul
 Instructor in Farm Accounts and Secretary of the Experiment Station.
- J. A. WATSON, M.D. 1303 Yale Place
 Clinical Instructor in Diseases of Nose and Throat
- AMOS S. WELLS, B.A., D.D.S. 3901 Lyndale Ave. N.
 Instructor in Crown and Bridge Work
- ANDREW J. WEISS 3705 Stevens Ave.
 Instructor in Technics
- H. B. WHITE, B.S.A. School of Agriculture
 Instructor in Carpentry
- NELLIE A. WHITNEY, B.A. 4432 Stevens Ave.
 Instructor in Rhetoric
- GRACE B. WHITRIDGE 654 Hague Ave., St. Paul
 Instructor in Physical Culture
- VAN H. WILCOX, M.D. 812 Pillsbury Building
 Instructor in Operative Surgery
- A. D. WILHOIT, M.A. 1155 Raymond Ave., St. Paul
 Instructor in Agricultural Chemistry and Soils
- CHARLES WILLIAMS, M.A. 312 Union St. S. E.
 Instructor in German
- ARCHIE D. WILSON, B.Agr. 1466 Raymond Ave., St. Paul
 Instructor in Agriculture
- RICHARD WISCHKAEMPER 516 Beacon St. S. E.
 Instructor in German
- FRANK R. WRIGHT, D.D.S., M.D. 713 Pillsbury Building
 Instructor in Anaesthesia and Oral Surgery.
- JAMES ZIMMERMAN, B.A. 1201 5th St. S. E.
 Instructor in Chemistry

Historical Sketch

When Minnesota was organized as a territory March 3, 1849, it was understood that a grant of public lands would be made by Congress for the endowment and support of a university as in the case of all other states carved out of this old northwest territory.

On December 10, 1850, delegate Sibley gave notice of a bill to grant two townships (46,080 acres) which became law on February 19, 1851. Meantime the Minnesota legislature had by Act, Feb. 13, created the University of Minnesota and made over to that corporation the proceeds of all lands which Congress might grant.

The location of the institution was fixed by this law "at or near the Falls of St. Anthony," by virtue of an understanding relating to the distribution of public buildings. A board of twelve regents elected in classes by the legislature had charge till 1860. In the fall of 1851, a preparatory school was opened. In 1856 intoxicated by the boom which was then raging, the regents began the erection of the rear part of the "old main" building. Before it was finished the panic of 1857 came on. The board could not pay the contractors nor meet the interest on the bonds they had been authorized to sell.

In the winter of 1860 the legislature replaced the old board of twelve regents by one of five appointed by the Governor. At the end of four years this board had not been able to put the finances of the University on a sound footing. Senator John S. Pillsbury laid before the legislature of 1864 a plan to pay off the accumulated debt by the sale of less than one-third of the land grant. A special board of three regents, headed by Mr. Pillsbury, was created to make the experiment. At the close of 1866 this board reported the debt substantially liquidated. A debt of gratitude is due to the creditors and bondholders for scaling down their just claims and accepting sums far below their dues. By means of a small appropriation the special board renovated the building, purchased furniture and appliances, and in November, 1867, opened the preparatory department, to which girls as well as boys were admitted.

This board having accomplished its purpose prepared for the legislature the bill which enacted into law February 13, 1868, became the actual charter of the University. By far the most important element was that which united with the University endowment proper the expected income from the congressional land grant of 1862 for the support of colleges of Agricultural and Mechanic Arts.

At the close of the college year of 1869 a small company of preparatory students were found ready for college instruction. A faculty of nine professors and instructors was elected and began their work in September. In this year William Watts Folwell was appointed president.

In 1873 two students were graduated at the first commencement. Some twenty years now passed in quiet work and growth, mostly in the academic department. A good beginning was made in that of engineering and mechanic arts, but in spite of most earnest endeavors by the regents the College of Agriculture developed slowly. There was little demand for proper agricultural instruction and the pedagogy of that branch had not been developed.

In the year 1870 Congress confirmed to the state a second grant of public land for a state university ingeniously embodied in the enabling act of Feb. 26, 1857, which the departmental authorities at Washington had persistently refused to recognize.

In September, 1884, Cyrus Northrop succeeded to the presidency and not long after began that great development familiar to all.

The Colleges of Law and Medicine were organized on a self-paying basis. New buildings sprang up, nobly equipped, and the faculties were reinforced as means accumulated. The growth of the College of Agriculture has been remarkable. The congressional appropriations for experiment stations and additional endowment have greatly increased its efficiency and prosperity. The College of Engineering has also enjoyed a rapid and cumulative development. The Colleges of Pharmacy, Dentistry, the School of Mines, Chemistry, Education, and the Graduate School have been added in recent years, the result of public demands for special technical training and research.

Equipment

GROUNDS AND BUILDINGS

The twenty-three buildings of the University used by all departments of instruction save that of agriculture, are located upon the University campus, a tract of about fifty-five acres lying between University avenue and the river and between eleventh and nineteenth avenues southeast, in the city of Minneapolis. The campus is well wooded with a fine grove of native oaks and commands a beautiful view of St. Anthony Falls and the city, but is sufficiently removed from the business center to insure desirable quiet and retirement. At the last session of the legislature provision was made for the expenditure of four hundred fifty thousand dollars in campus enlargement during the course of the years 1907-1909. Private benefactors have added fifty thousand dollars to that amount. Condemnation proceedings are now in progress for the purpose of obtaining the land desired. About thirty additional acres situated to the south of the present campus will probably be secured. The Department of Agriculture, including the college and school of agriculture, has a separate campus at St. Anthony Park, in the city of St. Paul, where are located the twenty-five buildings provided for this department and the state experiment station. Adjoining this campus is the University farm of about four hundred twenty acres.

ASTRONOMICAL OBSERVATORY

The astronomical observatory contains a ten and one-half inch refracting telescope furnished with a third lens for converting it into a photographic telescope; a filar micrometer; a spectroscope by Brashear; a meridian circle and zenith telescope; a Repsold photographic measuring machine, a chronograph, and astronomical clocks.

GYMNASIUM

The gymnasium is located in the armory, and is well equipped with a variety of gymnastic appliances. The object of the gymnasium is to provide all of the students of the University opportunity for exercise to build up their general health. It also provides special training to correct physical defects and functional derangements. The gymnasium is in charge of a professional medical director and assistant, and the

training is under their direct supervision. A thorough physical examination is offered each student immediately before and after the gymnasium course, and a record is made of the same. The examination of these records shows a marked improvement in the standard of health of the average student during his college course. The gymnasium is open at all times to all young men in the University who are free to use the apparatus and to pursue a course of physical training under the direct supervision of the director and his assistant. In some of the colleges of the University this work is required of all men.

MILITARY DRILL

The Act of Congress of 1862, providing for the establishment of "Land Grant Colleges," requires that instruction be given in military science and tactics at all institutions that are its beneficiaries. The armory is located on the University campus and has all the facilities usually provided in a modern armory. The United States government supplies the University with the necessary arms, equipment and ammunition for instruction in infantry and artillery drill, and details a commissioned officer of the regular army to take charge of the department.

THE ONE-MILE LIQUOR LAW

A state law provides that "it shall be unlawful for any person to sell or dispose of any spirituous, vinous, or malt liquors within the distance of one mile of the Main Building of the University of Minnesota, as now located in the city of Minneapolis; provided that the provision of this section shall not apply to that part of the city of Minneapolis lying on the west side of the Mississippi River."

ATHLETIC ORGANIZATIONS

The ATHLETIC ASSOCIATION is an organization having for its object the general physical well-being of the students and the encouragement of a proper spirit in favor of hearty, manly sports.

BOARD OF CONTROL FOR ATHLETICS. The athletic sports of the University are under the supervision of a board of control made up of eleven members; two are members of the faculty, two are alumni, and seven are students. This board arranges the schedule of games, manages the finances, and exercises a general supervision over all matters connected with athletic contests. It has charge of the whole of the athletic grounds of the University, Northrop Field. This field, containing about six acres, lies immediately adjoining the armory. It contains a modern cinder track, tennis courts, baseball diamond, and football gridiron. The grand stands have a seating capacity of about fifteen thousand. A large portion of this field was a gift to the University from the heirs of the late John S. Pills-

bury, and the brick wall surrounding it is the gift of his son, Mr. A. F. Pillsbury. It is generally conceded to be one of the finest fields in the West.

MUSEUMS AND COLLECTIONS

The museums of the University contain material obtained from various sources, arranged with special reference to its use for illustration. Among the more notable collections are the following:

GEOLOGY AND MINERALOGY. This museum includes the Kunz collection of minerals, purchased of George F. Kunz; several suits of crystalline rocks secured from various sources; the Ward collection of casts contributed in part by citizens of Minneapolis; collection of rocks, fossils, minerals and economic products of Minnesota; upwards of 9,000 entries gathered by the geological survey of the State; the Sardeson collection of paleozoic fossils of Minnesota, Wisconsin, Iowa, and neighboring states, comprising 30,000 specimens; a series of 3,000 thin sections of typical rocks and minerals largely representing Minnesota localities; purchased material comprising a fine collection of crystals; 5,000 minerals and 3,000 specimens of economic minerals and crystalline rocks, and a collection of over 4,000 photographs and lantern slides.

Mr. Arus S. Williams, of Minneapolis, has given to the University his extensive collection of negatives and photographs. During many years of active work as a photographer, he has collected a series of several thousand plates representing geologic and geographic subjects, commercial views and historic scenes. These will prove of great value in illustrating the physical, commercial and political history of the State. They are recognized as the A. S. Williams collection of Photographs and Photographic Negatives.

ZOOLOGY. The zoological museum contains all the material collected by the Zoological survey; a collection of mounted Minnesota birds representing about one-third of the species found in the state; a number of the mammals of the state and a few from the more western states; a collection of fishes, molluscan shells, Philippine Island corals and other foreign material.

The ornithological room contains the excellent Thomas S. Roberts and Franklin Benner collection of skins, nests and eggs of Minnesota birds. The entomological collection contains over 3000 named Minnesota insects, is particularly rich in aphidæ and contains the Guthrie collection of collembola. Other groups of animals are more or less numerously represented, and are receiving annual additions from the Zoological Survey.

BOTANY. The material forming the museum in botany includes the general herbarium numbering about 400,000 specimens and comprising the series of plants collected by the state botanist; an alcoholic collection of material for dissection; a collection of woods

of Minnesota; a limited series of carboniferous and cretaceous fossil plants, including the Lesquereaux collection from the Minnesota River localities.

MINING AND METALLURGY.—A museum of mining and metallurgy is located in the mining building. Representative ores of all the most important metals, drawings, photographs of furnaces, sectional furnace models and samples of all the different furnace products are exhibited to the public and are used as illustrative material for regular classes. Various mine appliances, pieces of machinery, underground photographs, models of mine timbering with sectional maps of some of the large Minnesota properties, complete the collection. A collection has been begun of ores from all the important mines on the Mesabi range. These samples with analyses show well the character of ore produced by the state.

SOCIOLOGY AND ANTHROPOLOGY. This department has recently acquired wall-charts and maps which present graphically a large number of sociological facts, from various parts of the United States; a collection of plaster-cast crania and skulls showing man's ancestors, fossil man from western Europe, typical members of the various living races and sub-races, both normal and artificially deformed; a collection of face-masks in color, presenting well the Oceanic peoples; a series of busts in white, presenting facial and cranial characteristics of a considerable number of different peoples; natural cranial, skull and skeletal materials from some dozen different continental and insular geographic areas; and the Guthrie collection of ethnologic specimens from the Bulu tribe of Kamerun province, Africa, presenting the material culture of a savage people in the Tropics.

TECHNOLOGY. A cabinet of specimens illustrating the products and processes of applied chemistry is being collected by the professor of chemistry, as opportunity offers. The collection embraces fuel, ores, furnace products, textile materials, both raw and manufactured, dyewoods and other materials used in dyeing; specimens illustrating the bleaching and printing of cotton, linen and woolen goods, earthenware, pottery, etc.

CLASSICS. Some material illustrating classical geography, topography, chronology, mythology, and art has been collected, consisting mainly of plans and charts, casts, pictorial illustrations, fac-similes of manuscripts and inscriptions.

ENGLISH. A few fac-similes of manuscripts, plates that may serve the purpose of archeological instruction, publication of texts, reprints of blackletter books and of original editions, photographs and portraits have been gathered.

CIVIL ENGINEERING. The department is collecting samples

of road material typical of the various localities of the State, and leading materials used in street paving, such as granite, trap rock, brick and asphaltum. A set of standard sections of steel and wrought iron is provided for illustration in the study of structural design.

MECHANICAL ENGINEERING. The collection consists of models of mechanical motions especially relating to the work in kinematics; sectioned apparatus, such as steam engines, pumps, valves, injectors, water meters and steam separators; various collections of drop forgings in iron, steel and copper; miscellaneous samples of commercial work representing the product of special machines; groups of standard nuts, bolts and screws; samples of belting, ropes, steel and iron cables, rawhide gears, pipe fittings and other material especially useful for illustrative purposes.

ELECTRICAL ENGINEERING. This museum contains a growing collection of samples furnished by various manufacturers and dealers for demonstrating the merits of different products and for illustrating modern practice; an excellent collection showing the development of electrical instruments, telephone apparatus, measuring instruments, lightning arresters, switches, primary and secondary batteries, early forms of dynamos and motors, lighting apparatus and various industrial applications of electricity; also a collection of samples from repair shops and elsewhere, illustrating the effects of wear, accidents and abuse.

ENGINEERING MATHEMATICS. This department has recently added to its apparatus used for illustration in teaching, several types of slide-rules, including those of Thatcher, Faber, Keuffel and Esser, Schureman's Computer, Boucher's Calculator; also Amsler's Polar Planimeter.

MATHEMATICS. The collection includes the Schroeder wooden and the Schilling gypsum, string and paper models for Solid Analytical Geometry, many of the Schilling models for illustrating the Theory of Surfaces, several of the Schilling mechanical devices for describing various loci, the Keuffel and Esser models for Solid Geometry, and large slated globes, suitably mounted, for use in Spherical Geometry and Spherical Trigonometry.

LIBRARIES

THE UNIVERSITY LIBRARY CONSISTS OF:

1. The general library.
2. The college libraries, including those of law, medicine, engineering, agriculture, and mines.
3. The departmental libraries, including those of arts, astronomy, animal biology, botany, chemistry, French, geology, German, Greek, Latin, mathematics, military science, physics, rhetoric, and Scandinavian.

The whole number of bound volumes owned by the University is about one hundred and twenty thousand, unbound books and pamphlets

about twenty thousand. About seven hundred and thirty current periodicals are received.

The general library is open to students and the public from eight A. M. to ten P. M. except Sundays and legal holidays.

The departmental libraries are designed especially for the work of their respective departments and consist mainly of books of reference and current periodicals relating to technical subjects. The private collections of the professors are usually available upon application when necessary for research.

Besides the University library the following libraries are easily accessible: the Minneapolis public library, containing over one hundred sixty thousand bound volumes and over fourteen hundred of the leading newspapers, magazines and periodicals of the world; the St. Paul public library with about ninety-five thousand volumes; the Minnesota Historical Society library of about eighty-five thousand volumes, and the state library of about fifty-nine thousand volumes in the capitol in St. Paul; the Minnesota Academy of Natural Sciences library of twelve thousand titles.

Assistants, Scholarships, Loans and Prizes

ASSISTANTS

It is the policy of the University to encourage graduate study and to provide for assistance in laboratories, reading of test and examination papers, supervision of note books, and similar services by the appointment of assistants in departments where such services are required. The general principles which now control the making of such appointments are: (1) the appointments are made by the board of regents, upon the nomination of the head of the department concerned and its ratification by the dean of the college; (2) appointments are for one year only, but may be renewed; (3) the appointees must be graduate students, who are taking work along the lines of the assistantships to which they are appointed; (4) assistants are not regularly placed in charge of classes, and when exceptions are made to meet emergencies, the arrangement is regarded as a temporary one, and in no case to extend beyond the current year.

SCHOLARSHIPS

THE MOSES MARSTON SCHOLARSHIP IN ENGLISH

Friends and pupils of the late Professor Moses Marston have given one thousand dollars as a memorial fund. The annual income of the fund is to be used to help some student in the English course. The award of the income is made on the basis of pecuniary need and of deserving scholarship.

THE ALBERT HOWARD SCHOLARSHIP FUND

Under the last will and testament of Mr. James T. Howard, of the town of St. Johnsbury, Vermont, \$4,166.81 was left to the University to establish a scholarship to be known as the Albert Howard Scholarship. This scholarship is assigned by the executive committee of the board of regents upon the recommendation of the faculty.

THE COLLEGE WOMEN'S CLUB SCHOLARSHIP

The College Women's Club of Minneapolis has established a scholarship for the benefit of women students in this University. For the year 1909-10 this scholarship amounts to \$150. In awarding it the preference

will be given to students in the junior and senior classes and to graduate students. Application for this scholarship may be made to Miss Comstock, Dean of Women.

STUDENT LOAN FUNDS

THE GILFILLAN TRUST FUND

The Hon. John B. Gilfillan has given to the University the sum of fifty thousand dollars, yielding an annual income of two thousand dollars, to be used by the board of regents to assist worthy students, needing such aid, to secure an education. The regents are empowered to give this aid in the way of loans or gifts, according to the circumstances of the case. As a rule the fund is used as a loan fund, and a small rate of interest is charged. The details of the regulations which have been adopted by the regents for the administration of the fund may be learned by addressing the President of the University.

THE ELLIOT SCHOLARSHIP LOAN FUND

To fulfill the wishes of the late Dr. A. F. Elliot to aid young men who find their efforts to obtain a practical education embarrassed through lack of means, the sum of \$5,000 was placed in the hands of the board of Regents as a scholarship fund. The income from this fund is loaned students in the School of Mines on the following conditions:

The financial needs of the applicant, his scholarship, moral character, enthusiasm shown in his work and promise of usefulness in his profession. When money is available it may be loaned to pay expenses of worthy students during sickness. The loans are to be repaid, without interest at the earliest convenience of the recipients.

THE PURITAN COLONY SCHOLARSHIP LOAN

The Puritan Colony of the National Society of New England Women has established a loan fund for women students of the University. For the year 1909-10 this scholarship loan amounts to one hundred dollars. It is available for women students of New England birth or ancestry. In awarding it the preference will be given to young women in the junior and senior classes. Application for it may be made to Miss Comstock, Dean of Women.

STUDENTS' TRUST FUND

The class of 1902 left with the School of Agriculture a fund of \$100 "to assist by temporary loans at a reasonable rate of interest, deserving students needing such help, who are not below the B class in the School of Agriculture." This fund is in charge of a committee consisting of the secretary, the principal, the preceptress, and the president of the A class.

THE LUDDEN TRUST

The Honorable John D. Ludden, of St. Paul, gave the University of Minnesota \$5,000 to be held, invested and re-invested by the University, through its Board of Regents, and the income thereof to be collected, received and applied by said Board of Regents to the financial assistance of students of either sex in the school of agriculture..

This fund produces \$200 a year. Those wishing to avail themselves of its benefits should apply to the executive committee of the Board of Regents of the University of Minnesota.

Mr. Ludden has since donated another \$5,000 for a like purpose so that the yearly income is now \$400.

PRIZES

THE JOHN S. PILLSBURY PRIZE

Three prizes of one hundred, fifty, and twenty-five dollars each, offered by the heirs of the late John S. Pillsbury, are awarded for the best work in the department of rhetoric, as evidenced finally by an oration in public.

THE '89 MEMORIAL PRIZE IN HISTORY

The class of 1889, at graduation, established a prize of twenty-five dollars each year, to be known as the '89 Memorial Prize, and to be given for the best thesis in history by a member of the graduation class. The award is made by a professor of history in some other institution.

THE WILLIAM H. DUNWOODY PRIZE

Mr. William H. Dunwoody has provided a cash prize of seventy-five dollars for the members of the team winning the inter sophomore debate, and another prize of twenty-five dollars for the student in the sophomore class writing and delivering the best oration.

THE FRANK H. PEAVEY PRIZE

Mrs. Frank T. Heffelfinger continues the prize of one hundred dollars, established by her father, the late Frank H. Peavey. This prize consists of seventy-five dollars for the members of the team winning the freshman-sophomore debate, and another prize of twenty-five dollars to the student in the freshman or sophomore class writing and delivering the best oration.

THE JAMES T. WYMAN PRIZE

A prize of twenty-five dollars is offered by the Hon. James T. Wyman, of Minneapolis, through the department of economics and political science,

for the best essay of three to five thousand words by an undergraduate student, on the subject of "The Influence of Immigration upon the Development of the Northwest."

THE WILLIAM JENNINGS BRYAN PRIZE

The Hon. William Jennings Bryan has given the University the sum of two hundred dollars for the encouragement of studies in political science. The annual income will be given as a prize to the writer of the best essay upon the topic to be announced each year. The competition is open to all students of the College of Science, Literature, and the Arts.

THE FRANK O. LOWDEN PRIZE

The Hon. Frank O. Lowden, of Chicago, offers as a prize to be competed for by the Northern Oratorical League, an endowment of three thousand dollars, which will yield an annual income of about one hundred seventy-five dollars. A prize of one hundred dollars will be given to the orator winning the first place, fifty dollars to the orator winning second place, and the remainder will be set aside each year for an interest fund to accumulate, and, in time, produce another endowment.

THE ROLLIN E. CUTTS PRIZE IN SURGERY

Dr. Mary E. Smith Cutts, '91 Medical, has given to the University, as a memorial of her husband, Dr. Rollin E. Cutts, '91 Medical, the sum of \$500.00, the income from which is to be awarded in the form of a gold medal to that member of the senior class of the College of Medicine and Surgery who presents the best thesis showing original work upon a surgical subject.

THE BRIGGS PRIZE IN FOUNDRY PRACTICE

For the encouragement of studies in foundry practice, Mr. O. P. Briggs, commissioner of the National Foundrymen's Association, Detroit, Mich., offers \$75 annually, in two prizes, which are to be accompanied by gold medals. The competition is open to sophomores in the College of Engineering, and the prize will be awarded for the best essay relative to the above subject. No prize will be awarded if less than five essays are submitted in competition. Essays should contain about 3,000 words, and must be submitted to the professor of rhetoric on or before May 1st.

THE GEORGE C. ANDREWS PRIZE

Mr. George C. Andrews, M. E. '87. has offered an annual prize to the Senior Mechanical Engineers for the best essay on any subject connected with heating and ventilation. The prize in this contest will consist

of \$50.00 in cash accompanied by a suitable medal; a second prize will also be given which will consist of \$25.00 in cash accompanied by a medal. The winner of the first prize will be offered a position with the George C. Andrews Heating Company.

PHARMACEUTICAL ASSOCIATION PRIZE

Nomination for membership in the American Pharmaceutical Association and the first year's dues are offered annually by Dean Wulling to the student in the College of Pharmacy earning the highest total average of all standings.

Student Organizations and Publications

RELIGIOUS ORGANIZATIONS

THE STUDENTS' CHRISTIAN ASSOCIATION was organized in 1869, its object being to promote growth in Christian character, and to engage in such religious work as may be deemed expedient and necessary. The association owns a commodious building, which serves as the headquarters for student religious activity. All persons in sympathy with the object of the association are eligible to membership.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION has as its object the promotion of "growth in grace and Christian fellowship among its members and aggressive Christian work, by and for students." This association leases the Students' Christian Association building and keeps it constantly open, with a general secretary in charge. All men in sympathy with the object of the association are eligible to membership. This building is maintained as the social and religious headquarters of all young men in the University.

This association provides an employment bureau whose services are free to students in all departments of the institution, as well as a committee to help students find comfortable rooms and boarding places. The association also maintains an educational department in which students may make up their entrance conditions at a nominal charge for instruction. The general secretary will be pleased to correspond with any young man intending to come to the University. Any inquiry about board, room, employment, or general information will gladly be answered, and a hand-book will be sent to anyone wishing it. Address the general secretary of the Young Men's Christian Association, University of Minnesota, Minneapolis, Minnesota.

THE YOUNG WOMEN'S CHRISTIAN ASSOCIATION is the center of Christian life among the young women of the University. Its object is "to deepen spiritual thought in the University woman, to environ her with a semblance of home, to bring to her friendship, assistance and sociability by stimulating student fellowship, to give her personal help when necessary; thus developing in her the Christ ideal of culture in womanhood."

To this end frequent socials and informal teas are given throughout the year; twice each week twenty-minute prayer meetings are held; a dozen circles meet one hour a week for devotional Bible study; and from time to time missionary meetings are held. The general secretary

devotes all of her time to the association and will be pleased to correspond with any young woman who wishes information regarding the University.

All young women are invited to visit the Young Women's Christian Association before registering. Women from the upper classes will be there during the opening days to give advice and assistance.

THE BISHOP GILBERT SOCIETY was organized by the Episcopal students, about three years ago. The purpose of the organization is to promote the religious influences of the Episcopal students in the University. Prominent speakers address the society during the year. Besides this, the society tends to promote good fellowship among its members. A club house has been planned and will soon be in process of construction.

THE UNIVERSITY CATHOLIC ASSOCIATION was organized by the Catholic students in the spring of 1900. The purpose of the association is the study of the Bible and of the doctrines and history of the Catholic Church. Membership is open to anyone connected with the University. Regular meetings are held every Sunday afternoon in the rooms of either the Young Men's or Young Women's Christian Association, through the courtesy of these organizations. The association is planning to erect a building near the campus at an early date.

Aside from the religious objects, the association tends to promote good fellowship among its members. Early in each University year a reception is tendered to new students and during the year two or more socials are held. Further information may be obtained by addressing the secretary of the association at the University.

LITERARY, SCIENTIFIC, AND MUSICAL ORGANIZATIONS

PHI BETA KAPPA. A chapter of the honorary society of PHI BETA KAPPA was established at the University in 1892. A small proportion of the graduates of the College of Science, Literature, and the Arts are elected to membership each year. Election is based upon high scholarship and character.

SIGMA XI. A chapter of the honorary scientific society of SIGMA XI was established at the University in 1896. A small proportion of the graduates of the scientific and technical departments are elected to membership each year. Election is based upon high scholarship and character.

THE GRADUATE CLUB is a club organized for the purpose of fostering a greater interest in graduate work, for mutual help, and for discussion of topics under investigation.

THE MINNESOTA LITERARY UNION is a federation of the members of the following societies: Shakopean, Forum, Castalian, Minerva, and Arena. Four meetings are held each year.

LITERARY SOCIETIES. The above named literary societies of the

Minnesota Literary Union are mainly debating clubs. Every student is welcome to attend the literary sessions, but the business sessions are usually held behind closed doors. Students desiring to join should make early application to some member of the society he prefers, as the membership is limited. Membership limit: Shakopean 35 men; Forum 30 men; Minerva 30 women; Law Literary, unlimited, law students; Castalian 35 men; Theta Epsilon 30 women; Thalian 25 women; Acanthus 30 women.

THE DEBATING BOARD has charge of home and inter-collegiate oratorical contests.

THE NORTHERN ORATORICAL LEAGUE is composed of the oratorical associations of the University of Michigan, Northwestern University, the University of Wisconsin, Oberlin College, the State University of Iowa, the University of Chicago, and the University of Minnesota. Its purpose is to foster an interest in public speaking and to elevate the standard of oratory by holding annual contests. The contests are open only to undergraduates.

THE DRAMATIC CLUB is organized for the study and practice of dramatic art.

THE EUTERPEAN CLUB is a regularly organized body of singers, composed of forty of the women students of the University. The selection of voices is made at the beginning of each school year. The club is under the direction of Professor Scott.

THE GLEE AND MANDOLIN CLUBS give a public concert each year at the University and make a tour of the state during the holidays.

THE UNIVERSITY BAND is organized as a part of the military system of the University and is composed of about sixty musicians. It is under the efficient leadership of an instructor in music, and furnishes music for military and many other University affairs.

AMERICAN CHEMICAL SOCIETY. A local section of the American Chemical Society has been organized in Minnesota with headquarters at the University.

THE SOCIETY OF ENGINEERS meets once in two weeks to listen to addresses by prominent engineers and for the discussion of various engineering topics. The Year Book of this society is published annually. It is devoted to the publication of articles upon engineering subjects by professors and students.

THE SCHOOL OF MINES SOCIETY meets once a month to listen to addresses by students, alumni and well-known mining and metallurgical engineers on various topics interesting to the professions. All students regularly registered in the School of Mines are eligible to membership. This society forms an important connecting link between the graduates in the field and the School of Mines.

THE MINNESOTA SECTION OF THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS meets monthly in St. Paul and Minneapolis alternately. Students of the College of Engineering are welcome at these meetings.

THE GRANGE is comprised of the members of the faculty of the Department of Agriculture and others connected with the institution and interested in its welfare. Meetings are held on the first and third Monday evenings of each month. The order is intended to bring those connected with the College and Station in closer touch with one another and with the many lines of work carried on in the several divisions. Its further purpose is to keep in closer touch with the scientific world and the grange work of the state and nation.

THE PHILOMETHIAN LITERARY SOCIETY is an organization of the students of the College of Agriculture, its object being to train its members in the art of public speaking, debating, and parliamentary practice. The society meets once a week and presents a program including readings, recitations, debates, etc. The membership is limited to forty and is only for students in the College of Agriculture.

THE FORESTRY CLUB was organized by the Forestry students for the promotion of good fellowship and mutual interests. The specific object of the club is to keep the members up to date on Forestry Literature and current affairs in the lumber world.

THE NORTHWESTERN BRANCH OF THE AMERICAN PHARMACEUTICAL ASSOCIATION meets six times a year at the College or elsewhere in the Twin Cities. Pharmacy students are always welcome at these meetings and are eligible to membership in the Branch.

PUBLICATIONS

THE MINNESOTA DAILY is published five times each week during the University year by an organization of University students.

THE JUNIOR ANNUAL, called "The Gopher" is a book published annually by the junior class of the University.

THE MINNESOTA MAGAZINE is a monthly magazine devoted to the cultivation of literary taste and effort among the students of the University. It is managed by a board of editors chosen from the senior class.

THE MINNE-HA-HA is a humorous monthly magazine, published by the students of the University. It depicts life upon the campus in a satirical vein. The board of editors consists of ten members, chosen from the student body.

THE MINNESOTA ALUMNI WEEKLY is published every Monday during the University year. The Weekly is published entirely in the interest of the alumni and is devoted to alumni news and such University news as may be of special interest to the alumni.

THE YEAR-BOOK OF THE SOCIETY OF ENGINEERS is published annually. It is devoted to the publication of articles upon engineering subjects by professors and students.

THE MINNESOTA FORESTER is the official organ of the Minnesota State Forestry Association. It is edited by the Forestry Department of the University and is devoted to the advancement of the Forestry movement with special emphasis on farm forestry.

THE SCHOOL OF MINES BULLETIN is published annually in April. It is devoted entirely to information concerning the alumni of the School of Mines. A complete record of each alumnus is published from the time of graduation to the time of publication of the Bulletin. The School of Mines Society issues this publication and sends it to every alumnus of the School.

THE MINNESOTA FARM REVIEW is a paper published and managed by the Alumni Association of the School of Agriculture. It is the official organ of the Alumni Association and the Farmers' Club. The REVIEW is intended to be a medium through which former students may keep in touch with the Agricultural School and with one another. It also endeavors to bring the farmers of the State into closer touch with the School, the College and the Experiment Station. To this end, the paper strives to present the latest progress in the experimental work of the various Stations and to call attention to the most practical farm practices.

WOMEN STUDENTS

After June first, 1909, the Registrar will supply a list of recommended boarding and rooming places to any women requesting such information. Young women who wish to earn a part of their expenses may generally learn of opportunities by communicating with Miss Ada Comstock, Dean of Women. During the college year Miss Comstock holds office hours every week day in the council room in Alice Shevlin Hall. At such times she welcomes any woman student who cares to come to her whether for advice, information, or an informal talk.

During the summer Miss Comstock's address is Moorhead, Minnesota. She will be glad to correspond with young women who are planning to enter the University or with their parents.

SHEVLIN HALL.—Through the generosity of Hon. Thomas H. Shevlin, the University now possesses in Alice Shevlin Hall a building admirably designed and equipped for the use of its women students. It is a two-story and basement structure, the material used being pressed brick with stone trimmings. It has a frontage of one hundred and fourteen feet on Pillsbury avenue and a depth of fifty-five feet. The purpose of this building is to furnish suitable rest and study rooms for the women attending the University. The building contains several society rooms, a large lunch room, and a general reception hall.

THE STUDENT GOVERNMENT ASSOCIATION FOR WOMEN.—This organization was formed for the purpose of aiding in the care and conduct of Alice Shevlin Hall. Every women student in the University is regarded as a member. There are no dues. The association makes rules for the guidance of those using Alice Shevlin Hall; it provides committees to enforce the rules; it gives permission for the holding of social functions in the building; and it controls the expenditure of any surplus in the receipts from the lunch room.

THE WOMEN'S LEAGUE.—This organization is open to all women who are students in the University. It is governed by a council made up of student members from the four college classes. It makes its headquarters in the council room in Alice Shevlin Hall. The aim of the organization is to promote good fellowship and sociability among the women of the University. For this purpose it gives receptions and parties for girls at regular intervals throughout the year. It also endeavors to aid in any project which may be of benefit to the University, and particularly to the women students. At present it is interested in the effort to secure dormitories.

Admission

Admission to the colleges or schools of the University is either by certificate or by examination. The candidate must offer fifteen year credits of high school work so chosen as to include those subjects required by the college or school which he wishes to enter. Of these fifteen year credits prescribed for admission the six in list A are required for admission to the freshman class in all the colleges and schools of the University except the College of Pharmacy, and no substitutions are accepted.

Certain of the nine additional credits to be selected from list B are prescribed by individual colleges, as indicated under requirements of individual colleges.

The term CREDIT means not less than five recitations of forty minutes each per week for a period of thirty-six weeks. In manual subjects and kindred courses a credit means the equivalent of ten recitation periods per week for thirty-six weeks.

LIST A

English.....	four credits
Elementary Algebra.....	one credit
Plane Geometry.....	one credit

LIST B

MATHEMATICS

- Higher algebra, one half credit
- Solid geometry, one half credit

LATIN

- Grammar, one credit
- Caesar, four books, one credit
- Cicero, six orations, one credit
- Virgil, six books, one credit

GREEK

- Grammar, one credit
- Anabasis, four books, one credit

GERMAN

- Grammar, one credit
- Literature, one credit

FRENCH

- Grammar, one credit
- Literature, one credit

SPANISH

- Grammar, one credit
- Literature, one credit

NORWEGIAN-SWEDISH

- Grammar, one credit
- Literature, one credit

HISTORY

- Ancient to Charlemagne, one credit
- Modern, from Charlemagne, one credit
- English, one half credit
- Senior American, one half credit

AMERICAN GOVERNMENT, one half credit

PHYSICS, one credit

CHEMISTRY, one credit

BOTANY, one half or one credit

ZOOLOGY, one half or one credit

ASTRONOMY, one half credit

GEOLOGY, one half credit

PHYSIOGRAPHY, one half credit

COMMERCIAL GEOGRAPHY, one half or one credit

BUSINESS SUBJECTS, accepted only as parts of a well defined course

- History of commerce, one half credit
- Economic History of England, one half credit
- Economic History of the United States, one half credit
- Elementary economics, one half credit
- Business law, one half credit
- Elementary bookkeeping, one half credit
- Advanced bookkeeping and business practice, one credit
- Stenography and typewriting, two credits
- Business spelling and correspondence, one half credit

MANUAL SUBJECTS, accepted only as parts of a well defined course

- Freehand drawing, two credits
- Mechanical drawing, two credits
- Shop work, two credits
- Modeling and wood carving, one credit
- Domestic art and science, two credits

REQUIREMENTS OF INDIVIDUAL COLLEGES

College of Science, Literature, and the Arts

- List A 6 credits
- List B, elective 9 credits

Entrance examination in English is required of all candidates for admission to the freshman class.

All who do not present credits for both higher algebra and solid geometry are required to take mathematics five times per week through the freshman year.

Graduates of accredited schools shall present all entrance grades marked; "passed," "passed with credit," or "passed with honor," and each subject marked "passed" shall count as an entrance condition unless a State High School Board certificate be presented for each subject so marked. For further detailed information see bulletin of the college.

College of Engineering and the Mechanic Arts

List A.....6 credits
List B.....*

Chemistry.....1 credit
Higher Algebra..... $\frac{1}{2}$ credit
Solid Geometry..... $\frac{1}{2}$ credit
Language.....2 credits
*Elective.....5 credits

Entrance examinations in elementary and higher algebra, plane and solid geometry are required of all except those who present Minnesota High School Board certificates for these subjects.

*Business subjects will not be accepted, and of the manual subjects only mechanical drawing and shop work may be counted towards admission.

College of Agriculture

For high school graduates,

List A.....6 credits
List B.....9 credits

For graduates of the School of Agriculture see bulletin of the College of Agriculture.

School of Agriculture

See bulletin of the School of Agriculture.

College of Law

List A.....6 credits
List B.....9 credits

In addition students must present credits showing the completion of one full year of collegiate work in Arts and Science.

College of Medicine and Surgery

1. FOR CANDIDATES FOR THE DEGREES B. S. & M. D.

List A.....6 credits
List B.....

Latin.....2 credits

Higher Algebra.....	½ credit
Solid Geometry.....	½ credit
Elective.....	6 credits

In addition two years of prescribed college work in science, literature and the arts, comprising the following named subjects:

Second part Higher Algebra.....	one semester
Trigonometry.....	one semester
General Inorganic Chemistry.....	one year
Qualitative Analysis.....	one year
.....	one year
.....	one year

ERRATA:

To the list of college subjects required in the B. S. and M. D. course on page 57 add Physics, one year.

Military -
Physical Culture.....

*German.....
or German and French.....two years

*Students who enter without German are required to take two years of German.

Students who enter with two years of German must take one year of German, and may elect German or French for the other year.

2. FOR CANDIDATES FOR THE DEGREE M. D.

List A.....6 credits

List B.

Latin.....	2 credits
Elective.....	7 credits

Two years of regular college work in science, literature and the arts including specifically the following subjects:

Biology (Zoology or Botany).....	one year
General Inorganic Chemistry.....	one year
Qualitative Analysis.....	one year
Language (German or French).....	one year
Physics.....	one year

College of Homeopathic Medicine and Surgery

Same as for Medicine and Surgery above.

All who do not present credits for both higher algebra and solid geometry are required to take mathematics five times per week through the freshman year.

Graduates of accredited schools shall present all entrance grades marked; "passed," "passed with credit," or "passed with honor," and each subject marked "passed" shall count as an entrance condition unless a State High School Board certificate be presented for each subject so marked. For further detailed information see bulletin of the college.

..... 2 credits
 *Elective..... 5 credits

Entrance examinations in elementary and higher algebra, plane and solid geometry are required of all except those who present Minnesota High School Board certificates for these subjects.

*Business subjects will not be accepted, and of the manual subjects only mechanical drawing and shop work may be counted towards admission.

College of Agriculture

For high school graduates,

List A..... 6 credits
 List B..... 9 credits

For graduates of the School of Agriculture see bulletin of the College of Agriculture.

School of Agriculture

See bulletin of the School of Agriculture.

College of Law

List A..... 6 credits
 List B..... 9 credits

In addition students must present credits showing the completion of one full year of collegiate work in Arts and Science.

College of Medicine and Surgery

1. FOR CANDIDATES FOR THE DEGREES B. S. & M. D.

List A..... 6 credits
 List B.

Latin..... 2 credits

Higher Algebra.....	½ credit
Solid Geometry.....	½ credit
Elective.....	6 credits

In addition two years of prescribed college work in science, literature and the arts, comprising the following named subjects:

Second part Higher Algebra.....	one semester
Trigonometry.....	one semester
General Inorganic Chemistry.....	one year
Qualitative Analysis.....	one year
General Zoology.....	one year
Comparative Anatomy of Vertebrates.....	one year
General Botany.....	one year
Elements of Economics.....	one semester
Economic Conditions in American Cities.....	one semester
Rhetoric.....	one year
Military Drill.....	two years
Physical Culture.....	one year
*German.....	two years
or German and French.....	two years

*Students who enter without German are required to take two years of German.

Students who enter with two years of German must take one year of German, and may elect German or French for the other year.

2. FOR CANDIDATES FOR THE DEGREE M. D.

List A.....	6 credits
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List B.

Latin.....	2 credits
Elective.....	7 credits

Two years of regular college work in science, literature and the arts including specifically the following subjects:

Biology (Zoology or Botany).....	one year
General Inorganic Chemistry.....	one year
Qualitative Analysis.....	one year
Language (German or French).....	one year
Physics.....	one year

College of Homeopathic Medicine and Surgery

Same as for Medicine and Surgery above.

College of Dentistry

List A	6 credits
List B.	
Latin	1 credit
Manual Training	1 credits
Elective	7 credits

College of Pharmacy

English	2 credit
Elementary Algebra	1 credit
Plane Geometry	1 credit
Physics	1 credit
Latin	2 credits
Elective, (see bulletin College of Pharmacy)	

School of Mines

List A	6 credits
List B.	
Higher Algebra	$\frac{1}{2}$ credit
Solid Geometry	$\frac{1}{2}$ credit
Elective	8 credits
Entrance examinations in elementary and higher algebra, plane and solid geometry are required of all candidates for admission.	

School of Analytical and Applied Chemistry

List A	6 credits
List B.	
Higher Algebra	$\frac{1}{2}$ credit
Solid Geometry	$\frac{1}{2}$ credit
Chemistry	1 credit
Elective	7 credits

Every applicant for admission to the Applied Course must either present State High School Board certificates for the mathematical subjects required for admission, or take the entrance examinations in said subjects at the University.

College of Education

List A	6 credits
List B	9 credits

In addition two years of collegiate work in any college or university of recognized standing are required.

Graduate School

See bulletin of that school.

ADMISSION BY CERTIFICATE

Graduates of the following courses, provided their preparation satisfies the specific requirements of the college they desire to enter, will be admitted to the freshman class without conditions, except where entrance examinations are required.

(a) Any four-year course of a Minnesota State High School or other accredited school in the state.

(b) A four-year course of schools in any other state accredited to the State University of that state.

(c) The advanced Latin or English course of the Minnesota state normal schools.

A candidate wishing to enter the University from an accredited school should furnish the registrar an official statement of his preparatory work certified to by the principal of the school from which he comes. Blank certificates for admission for school year 1909-1910 may be secured from the registrar, and should be filled out and returned to him for approval before August 1st, 1909. An applicant will be admitted conditionally who is deficient in not more than three half year credits (one year credit in the College of Engineering), and such entrance conditions must be removed before the beginning of the sophomore year; provided, that no student entering the College of Engineering or the School of Mines may be conditioned in Mathematics except upon special permission of the department of Mathematics.

ADMISSION BY EXAMINATION

For program of entrance examinations see page 3.

Whenever admission is by examination, the candidate must pass examinations in the credits specifically, required for entrance to the college in question, and in addition sufficient credits from the group of electives in list B, to make a total of fifteen year credits; provided that, if the total deficiency does not exceed three half year credits (in the College of Engineering one year credit), the applicant shall be admitted conditionally and be given one year in which to make up the entrance conditions. Provided that no student entering the College of Engineering or the School of Mines may be conditioned in mathematics except upon special permission of the department of mathematics.

LIST OF ACCREDITED SCHOOLS

Graduates of the following Minnesota State High Schools will be admitted to the University of Minnesota without conditions, provided

that their credentials satisfy the specific requirements of the college to which entrance is desired.

Ada	Cottonwood	Hector	Marshall
Adrian	Crookston	Henderson	Mazeppa
Aitkin	Dawson	Herman	Milaca
Albert Lea	Delano	Heron Lake	Minneapolis
Akeley	Detroit	Hibbing	Central
Alden	Dodge Center	Hinckley	East
Alexandria	Duluth	Hopkins	North
Amboy	Central	Houston	South
Annandale	Industrial	Howard Lake	West
Anoka	Eagle Bend	Hutchinson	Minneota
Appleton	E. Grand Forks	Jackson	Montevideo
Argyle	Elbow Lake	Janesville	Montgomery
Arlington	Elgin	Jordan	Monticello
Atwater	Elk River	Kasota	Moorhead
Austin	Elmore	Kasson	Mora
Bagley	Ely	Kenyon	Morris
Barnesville	Eveleth	Kerkhoven	Morton
Belle Plaine	Excelsior	Lake Benton	Mountain Lake
Bemidji	Fairfax	Lake City	New Prague
Benson	Fairmount	Lake Crystal	New Richland
Bird Island	Faribault	Lakefield	New Ulm
Biwabik	Farmington	Lake Park	Northfield
Blooming Prairie	Fergus Falls	Lamberton	North St. Paul
Blue Earth	Fertile	Lanesboro	Olivia
Brainerd	Fosston	Le Roy	Ortonville
Breckenridge	Frazee	Le Sueur	Osakis
Browns Valley	Fulda	Le Sueur Center	Owatonna
Buffalo	Gaylord	Litchfield	Park Rapids
Caledonia	Glencoe	Little Falls	Paynesville
Cambridge	Glenwood	Long Prairie	Pelican Rapids
Canby	Graceville	Luverne	Perham
Cannon Falls	Grand Meadow	Lyle	Pine City
Cass Lake	Grand Rapids	McIntosh	Pine Island
Chaska	Granite Falls	Mabel	Pipestone
Chatfield	Hallock	Madelia	Plainview
Chisholm	Halstad	Madison	Preston
Clarkfield	Harmony	Mankato	Princeton
Cloquet	Hastings	Mantorville	Red Lake Falls
Cokato	Hawley	Mapleton	Red Wing

Redwood Falls	St. Peter	Stillwater	White Bear
Renville	Sandstone	Thief River Falls	Willmar
Rochester	Sauk Center	Tracy	Willow River
Royalton	Sauk Rapids	Two Harbors	Windom
Rush City	Shakopee	Tyler	Winnebago
Rushford	Sherburn	Virginia	Winona
St. Charles	Slayton	Wabasha	Winthrop
St. Cloud	Sleepy Eye	Wadena	Worthington
St. James	South St. Paul	Warren	Zumbrota
St. Louis Park	Springfield	Waseca	
St. Paul	Spring Grove	Waterville	
Central	Spring Valley	Welcome	
Cleveland	Staples	Wells	
Humboldt	Stephen	West Concord	
Mechanic Arts	Stewartville	Wheaton	

Graduates of the following private schools will be admitted to the freshman class under same conditions governing admission of high school graduates, provided, that the regular four-year course taken satisfies the specific requirements of the college to which entrance is desired and provided also, that the student be recommended by the principal of the school for admission to the University:

St. Mary's Hall, Faribault	St. Paul's College, St. Paul Park
St. Paul Academy	The Loomis School, St. Paul
Shattuck Military Academy, Faribault	The Backus School for Girls, St. Paul
Stanley Hall, Minneapolis	The College of St. Catherine, St. Paul
Windom Institute, Montevideo	St. Margaret's Academy, Minneapolis
Concordia College, Moorhead	The Winona Seminary, Winona
Pillsbury Academy, Owatonna	St. John's College, Collegeville
St. Joseph's Academy, St. Paul	St. Thomas College

ADMISSION AS UNCLASSIFIED STUDENTS

Whenever in the judgment of the enrollment committee an applicant presents satisfactory reasons for not taking the regular course, such applicant may be admitted as an unclassified student. He must take the same examinations or present the same credentials as are required of those who enter the freshman class. Exceptions can be made only upon vote of the faculty. A new application must be made each semester to the enrollment committee. Provided, that no unclassified student shall be admitted to the School of Mines.

ADMISSION TO STUDY MUSIC

Students who enter the University for the express purpose of studying music, must take the same examinations or present the same credits that are required of those who apply for admission to the freshman class. No student is admitted for the purpose of studying music, unless he presents a certificate from the department of music showing that he is qualified to pursue the courses offered.

ADMISSION TO ADVANCED STANDING

1. FROM OTHER COLLEGES

This University accepts records from all reputable colleges for credit to advanced standing. Such records are accepted as far as they are equivalent to the work done in the college to which admission is sought, subject to the approval of the departments concerned. In bringing records from other institutions, the certificate must be upon the official blank of the institution granting the certificate, and should show:

- (a) The subject studied; if a language, the books read, etc.
- (b) The time spent upon each subject
- (c) Ground covered in laboratory work, in case of laboratory subjects
- (d) The result. It is sufficient to state that the subject was completed creditably.

Records from institutions whose entrance requirements are not as high as those of this University will not be accepted for equivalent rank. The credits to be allowed in such cases will be determined by the Enrollment Committee of the college in question.

2. FROM MINNESOTA NORMAL SCHOOLS

Graduates of the "advanced graduate course" of a Minnesota State Normal School are admitted to the College of Science, Literature, and the Arts (see bulletin of College of Science, Literature, and the Arts) with advanced standing equivalent to one year's credit.

Individual graduates of the "Advanced Latin course" (five year) or of the "Advanced English course" (five year) of a Minnesota State Normal School, who on the basis of maturity and ability, present certificates of special fitness from the president of the Normal School, will be admitted with advanced standing under the same regulation and proviso.

DESCRIPTION OF SUBJECTS ACCEPTED FOR ADMISSION

The following statements indicate in a general way the preparation which the University expects in the various subjects accepted for admission.

ENGLISH (four years)

In order to secure a definite plan of study and unity of method on the part of preparatory schools, the entrance requirement in English is outlined below somewhat in detail. To satisfy this requirement a four-year course of not less than four hours per week must be pursued. The headings under which instruction will naturally fall are:

- (a) English Classics
- (b) The Principles of Rhetoric
- (c) Practice in Written Expression

(a) English Classics should include a critical reading, in class, of English masterpieces. The following are suggested as well adapted for such study: Shakespeare's *Macbeth*; Milton's *Paradise Lost*; Carlyle's essay on *Burns*. In the study of these works the student should know the leading facts connected with the author and his time; he should become familiar with the subject matter of the work and thoroughly at home with the story, and should have a clear idea of the form and structure of the work as a whole.

A less critical knowledge of other standard or classic works, which may perhaps be read by the student at home, with written reports and brief oral discussions in class, is desirable. The following works are noted as indicative of the minimum amount of work expected: at least two of Shakespeare's plays, beside the one read in class, one of Irving's works, one of Hawthorne's novels, one of Stevenson's novels, one of Webster's orations.

(b) The work in the principles of composition should include the principles and technical terms of ordinary texts upon the subject, whether acquired by the direct study of such texts or mainly by the study of selected English masterpieces. It should not be forgotten that this is not an end in itself, but simply a means of teaching the student the correct use of English.

(c) Not less than one hour each week throughout the four years of the high school course should be devoted to practice in written expression. The instructor may choose such topics as local conditions may require or make most profitable; but whatever line of work is pursued, the student should be taught to use language correctly and forcibly and learn to express himself clearly and logically in writing.

ELEMENTARY ALGEBRA (one year). Addition, subtraction, multiplication, division, factoring, highest common divisor, lowest common multiple, fractions, simple equations, with one, two, and several unknown quantities followed by problems, theory of exponents, involution (including the binomial theorem for positive integral exponents), evolution, radicals, inequalities, ratio, proportion, progression, and quadratic equations, with problems.

HIGHER ALGEBRA, FIRST PART (one-half year). While this subject does not include any topics not named under elementary algebra, a much fuller treatment of those topics is expected in this work. Principles as well as processes should be learned, theorems and rules should be rigorously demonstrated, the exercises and problems should be more difficult, and students should be drilled in short methods and rapid work. Unless candidates have a good knowledge of the fundamental topics named below, they are not prepared to pursue successfully at the University the second part of higher algebra.

The topics are addition, subtraction, multiplication, division, factoring, highest common divisor, lowest common multiple, fractions, theory of exponents, involution, evolution, surds, imaginaries and simple equations with problems.

PLANE GEOMETRY (one year). Any of the standard texts on this subject will furnish the necessary preparation. Isoperimetry, symmetry and maxima and minima of figures are not required. The exercises requiring solutions and demonstrations should not be omitted.

SOLID GEOMETRY (one-half year). Any of the standard texts on this subject will furnish the necessary preparation. The exercises requiring solutions and demonstrations should not be omitted.

LATIN GRAMMAR (one year). This will include the subjects of orthography, etymology and syntax. Proficiency is particularly desired in the following subjects: the analysis of the verb forms, the rules of syntax, and the principal parts of the irregular verbs.

CAESAR (one year). First four books or selections from the seven books equivalent to four; or three books, with thirty pages of Cornelius Nepos, or two books with sixty pages of Cornelius Nepos. Special attention should be paid to the translation of passages of the text into correct and idiomatic English; grammatical questions connected with the text; more especially on the subjunctive mood, indirect discourse and the sequence of tenses. The student is expected to be familiar with the life of Caesar and an account of his wars.

CICERO (one year). Any six orations from the following list. **AGAINST CATILINE, POET ARCHIAS, LIGARIUS, MARCELLUS, MANILIAN LAW** (to count as two orations), the fourteenth **PHILLIPIC**. The student should also be familiar with the life of Cicero.

VIRGIL (one year). Six books of the **AENEID**, or five of the **AENEID** and one of the **METAMORPHOSES** of Ovid, or the **ECLOGUES**. The student should be familiar with the life of Virgil and an account of his times and writings. A correct rythmical reading of the text is to be encouraged.

GREEK GRAMMAR (one year)

XENOPHON'S ANABASIS (one year)—Four books

GERMAN (two years)

First year the pupil should acquire:

- (1) A correct pronunciation, training of the ear, eye and organs of speech.
- (2) A vocabulary of a thousand words of every day use; facility in combining these words into simple sentences. As a means to this, 100 to 150 pages of easy narrative prose and poetry should be read, from which questions and answers may be formed. To test the student's memory and knowledge of the word-order he should relate or write out the story anew in his own words.
- (3) From two to three hundred German idioms.
- (4) The essentials of German grammar, to be taught by means of oral and written exercises based upon the reading lessons.

Second year:

- (1) Read one hundred and fifty to two hundred pages of prose and poetry.
- (2) Practice in reading smoothly and with expression.
- (3) Carefully translate selected passages of the text into idiomatic English. To translate easy sentences which the student already understands is a waste of time.
- (4) Translate sentences from English into German, using words and idioms of the text read.
- (5) Study topically German grammar; chief rules of orthography, etymology and syntax; illustrate these by words, phrases and sentences selected or composed by the student.

FRENCH (two years). The principles of French grammar, including acquaintance with the verb, regular and irregular; an ability to translate easy English sentences into French and simple French prose into English.

SPANISH (two years). First year, grammar and reader; second year, grammar reviewed; reading of some modern writer; composition and conversation.

NORWEGIAN (two years). First year, grammar and reader; one of Bjornson's stories. Second year, grammar reviewed; Raabe's History of Norway and a modern story or some easy play; composition and conversation.

SWEDISH (two years). First year, the essentials of Swedish grammar; reading of easy prose and verse. Second year, grammar reviewed and composition; works of Tegner and Runeberg; elementary history of literature.

ANCIENT HISTORY (one year)

(a) This study should begin with from five to seven weeks upon the oriental peoples who have most influenced European development, noting the early civilizations in the valleys of the Nile and Euphrates, the spreading and meeting of these civilizations in the intermediate region, with notice of the more important states in that district, and the union of the East under Persia. This survey should aim to give an idea of the reach of recorded history, of the distinguishing features of the successive oriental nations, and of their more important influence upon later European development.

(b) In the Greek and Roman age emphasis should be put upon the evolution of institutions, and considerable attention should be paid to the later Hellenistic period, after the rise of Macedon, and to the Roman Empire, with its bearing upon subsequent history. Some of the work should be illustrated by the use of sources, and maps should be used constantly.

(c) The subject should be carried down to the establishment of Charlemagne's empire. This will bring together all the chief lines of influence which were afterward to make our modern world, will show the meaning of the preceding eras as can not be done if the study stops at an early date, and will leave the subject at a period of comparative order and simplicity.

MODERN HISTORY (one year). From Charlemagne to the present. The topics to which special attention are called are the period of disorder after Charlemagne and the consequent rise of feudalism, the Holy Roman Empire and the papacy, the medieval church, the crusades, the free cities, the rise of national monarchies, the intellectual renaissance and the protestant reformation, the French revolution and the subsequent democratic movements in politics and industry.

It is desirable to give at least half of the year to this last period from 1789.

ENGLISH HISTORY (one-half year). The Saxon period should be passed over rapidly. In the remainder of the work, besides the narrative, constitutional points should receive attention, and easily accessible documents, like Magna Charta, should receive careful study.

SENIOR AMERICAN HISTORY (one-half year). No attempt should be made to cover the whole field in this time. Either the colonial history or the period from 1783 to 1832 offers quite enough material. In any case, considerable use should be made of collections of documents, and sources.

AMERICAN GOVERNMENT (one-half year.) This should be a study of our government, national, state and local, as it is organized and actually operated today. Students should be made familiar with the purpose and salient features of important instruments of government and other public acts like the Declaration of Independence, Articles of Confederation, the Constitution of the United States, the constitution of Minnesota, and a local city or village charter.

In no case, however, should the instruction consist wholly or largely of an analysis of documents. It should rather aim to impart information essential to intelligent, active citizenship, such as the division of the government into departments, their organization and function; the methods of nominating, electing, and appointing men to office; of framing and amending constitutions, city charters and statutes; of drawing grand and petit juries and the duty of the citizen to serve on them; the distinction between common law, state law, and constitutional law, between equity, civil and criminal cases.

To make the government seem a real working organization to the student, he

should be encouraged to observe public proceedings by attending school meetings, town meetings, sessions of the county commissioners, city council, state legislature, a trial in court, and party primaries and conventions. He should also be led to read about and observe public affairs for himself. To that end let him collect statistics and accounts of work done by particular offices and departments from published reports and by personal inquiry.

PHYSICS (one year). It is suggested that the year's work be confined to four of the seven subjects mentioned below.

(1) Mechanics of solids, (2) liquids and gases, (3) sound, (4) heat, (5) light, (6) and (7) electricity and magnetism (to count as two subjects, but not to be divided).

CHEMISTRY (one year). The full year's work should include a study of both the non-metals and metals with laboratory experiments illustrating the common chemical laws and the commoner chemical reactions.

BOTANY (one or one-half year). Schools which give one-half year of botany should devote particular attention to plant relations, making the course largely ecologic in bearing. When a whole year is given to the subject, additional work upon plant structures should be offered, and together with fundamental conceptions of ecology, a general idea of morphology and taxonomy should be the aim of the course.

ZOOLOGY (one or one-half year). The course of zoology, whether a half year or a year course, should be a natural history rather than a modern morphological course. Collecting and classifying (as a means) should be encouraged as much as possible. Animals should be studied as living units, in their relation to one another and their environment. The general and special structural feature in relation to the habits, the food and manner of obtaining it, the enemies and means of protection against them, hibernation, migration, the differences in habits, form and structure between the old or mature animal and the young, the relation of parents to their offspring, etc.—in short, all about the life of the animal under consideration should be made out by direct observation of the animal in its natural home and in confinement.

The course, on the whole, should aim to foster and develop a love for nature, train the power of observation toward accuracy and give a healthful stimulation to the imagination. The pupil should be guarded against the habit of confounding the facts of observation with his interpretation and his judgments.

The animals for direct observation should be selected from as many branches of the animal kingdom as possible, and the changes during the year in the character of the fauna of the locality in general as well as of some particular region should be noted. In some localities the work will of necessity be largely restricted to land and air animals, but no locality in Minnesota is so poor in animal life that very profitable work cannot be laid out along the line indicated above.

It will be noticed that such a course of necessity includes so-called laboratory work. The amount and extent of the laboratory work will depend upon conditions, but even under the best conditions it is hardly advisable to go into detailed dissections and embryology. Continued, repeated, and close observation, aided now and then, by a simple hand lens or a compound microscope, will reveal an abundance of material and opportunity for disciplining the mind.

ASTRONOMY (one-half year). An elementary course in general astronomy as presented in any good modern text-book.

GEOLOGY (one-half year). These subdivisions should receive special attention: physiographic geology, which treats of the building of the land and the evolution of its existing contours; geo-dynamics, the study of the forces, atmosphere, water, terrestrial heat, plants and animals modifying the earth; and a brief survey of historical geology.

PHYSIOGRAPHY (one-half year). The following topics should be emphasized: meteorology, the leading facts relating to the atmosphere and its phenomena, includ-

ing some acquaintance with the work of the United States weather bureau; land sculpture, as it treats of the origin, development and decadence of land forms, and the influence of these processes on the physical environment of man.

COMMERCIAL GEOGRAPHY (one-half or one year). As the history of commerce is concerned with the past, so commercial geography describes and seeks to explain the commerce of today. The work should cover the ways in which commerce depends on nature and on man, the development of means of transportation and communication, and a detailed study of the several commercial nations of the world with reference to resources, industries, transportation facilities and commerce. It should be based on a text book supplemented by map work and assigned readings.

BUSINESS SUBJECTS

THESE ARE ACCEPTED FOR ADMISSION ONLY WHEN CONSTITUTING PARTS OF A BUSINESS COURSE

The following syllabi are offered by the University in order that the schools may be informed concerning the preparation expected in business subjects, in view of the fact that the graduates of business courses are now admitted to certain colleges of the University on the same footing as the graduates of other courses.

It is not intended or expected that many schools, or perhaps any one school, will offer all the subjects indicated. Not to exceed forty per cent of the units for admission should in any case be taken from the list of technical business subjects named below. The other sixty per cent should embrace the required English and mathematics, together with some work in history, science and the modern languages. The University is strongly of the opinion that no business course should be offered which does not include at least two years of some one modern language.

Under the head of business subjects are included two distinct lines of work: first, courses dealing with the history, description, theory and law of business, including the history of commerce, commercial geography, elementary economics and business law; second, courses dealing with the technique of business. The latter may be further subdivided into the mathematics of business, including business arithmetic, bookkeeping and business practice; and the language of business, including stenography, typewriting and business correspondence.

HISTORY OF COMMERCE (one-half or one year). The history of commerce forms the natural introduction to the study of present economic conditions. It would be well to give special attention to the economic history of England and the United States. The work should be based on a text book, supplemented by carefully directed map work and assigned readings. This should be preceded by a year course of medieval and modern European history.

ECONOMIC HISTORY OF THE UNITED STATES (one-half year). A study of American history with special attention to the economic factor. It should be based on some text book such as Wright, Coman or Nogart and supplemented by collateral reading, especially in books such as Semple and Brigham on geographic influences.

This course will naturally follow the one on English history and may take the place of the usual political American history.

ECONOMIC HISTORY OF ENGLAND (one-half year). A study of English history with special reference to causes and effects of her economic development. It should be based on some of the smaller economic histories such as Cheyney, Price or Cunningham and McArthur.

This course, where given, will naturally follow the courses in general European history, and may take the place of the usual political English history.

ELEMENTARY ECONOMICS (one-half year). In the study of economics it is desirable to avoid two extremes, abstract theory on the one hand, and controversial questions such as the tariff, trusts, and trade unions on the other hand. Emphasis

should be placed on historical and descriptive matter, especially relating to the economic development of England and the United States. Some good elementary text book should be mastered and a reasonable amount of collateral reading required.

BUSINESS LAW (one-half year). The object of this study is not to make "every man his own lawyer" but rather to enable him to keep out of legal complications. Text book supplemented by study of a few typical cases, and practice in drawing up ordinary legal papers such as bills, notes, checks, etc.

BUSINESS ARITHMETIC (one-half year). The object is first of all, absolute accuracy and secondly speed in ordinary business computations. The topics to be emphasized are fundamental operations, common fractions having as denominator 2, 3, 4, 6 and 8, a few common weights and measures, percentage and its applications, and useful short methods, especially the use of interest and other calculation tables. The work should be based on a text book, supplemented by numerous live exercises from current sources.

ELEMENTARY BOOKKEEPING (one year). A text book should be employed with exercises so arranged that no two pupils will do exactly the same work, and no credit should be allowed unless the work is done neatly, accurately and at a satisfactory rate of speed. It is suggested that double periods be provided, and all work be done in class under the eye of the instructor. The set used should include the journal, cash book, sales book, ledger, check book, bank pass book and trial balance book.

ADVANCED BOOKKEEPING AND BUSINESS PRACTICE (one year). Thorough drill on standard business forms, such as bills, receipts, checks, notes, etc., also on the use and meaning of business symbols and abbreviations. The student should become acquainted with the bill book and invoice book, and loose leaf and voucher systems of bookkeeping. Each student should carry on a business of his own, first as an individual, then as a partnership, and finally as a corporation. Credit on this course should mean that the student lacks only age and actual business experience to become a competent bookkeeper.

STENOGRAPHY AND TYPEWRITING (two years). This work is expected to occupy not less than two periods daily for two years. No credit should be given for either shorthand or typewriting if taken alone. Nothing but the touch method should be used in typewriting. The essentials are first, accuracy and speed in taking dictation and transcribing notes; secondly, correct spelling, capitalization, punctuation and paragraphing. The minimum speed at the end of the first year should be 75 words per minute in dictation and 25 words per minute on the machine; and at the end of the second year, 100 words per minute in dictation and 35 words per minute in transcribing notes. Thorough training should also be given in care of the machine, in modern methods of manifolding and in filing papers.

SPELLING AND BUSINESS CORRESPONDENCE (one-half year). Preliminary review of five hundred common technical business words. Thorough training on business correspondence including (1) the proper form for business letters, (2) the proper choice of words and construction of sentences with reference to clearness and brevity, (3) capitalization, punctuation and paragraphing, (4) writing and answering telegrams and advertisements. The work should be based on a text book supplemented by letters relating to the most prominent industries of the locality.

MANUAL SUBJECTS

THESE ARE ACCEPTED FOR ADMISSION ONLY WHEN CONSTITUTING PARTS OF A
MANUAL TRAINING COURSE

In view of the multiplication of manual training courses in the high schools, it seems well to define what the University expects in the line of manual training and drawing work. It is not implied that many schools, or perhaps any one school, should offer all of the subjects indicated. Not to exceed twenty-five

per cent of the units for admission to the University should in any case be taken from the list given below. The major part of the course should consist of the required English, and of mathematics, history, business subjects, science and foreign languages. Students taking a manual training course should be held to a full course in mathematics, and should be required to complete not less than two years of one foreign language.

Owing to the fact that drawing and shop work do not require outside preparation, it is not fair that they should be credited by the schools on the same basis as the academic subjects. It is therefore suggested that half the credits be allowed: that is to say, one full credit for two years of work one period daily, or for one year of work two periods daily, in each subject.

FREEHAND DRAWING (two credits)

MECHANICAL DRAWING (two credits)

JOINERY (one-half credit)

WOOD TURNING AND CABINET MAKING (one-half credit)

PATTERN MAKING AND FORGE SHOP (one-half credit)

MACHINE SHOP, INCLUDING CHIPPING

FILING AND WORK ON THE IRON LATHE (one-half credit)

DRILL PRESS AND IRON PLANER

CLAY MODELLING (one-half credit)

WOOD CARVING (one-half credit)

DOMESTIC ART, INCLUDING CAREFULLY GRADED EXERCISES IN SEWING (one credit)

DOMESTIC SCIENCE, INCLUDING PRACTICAL COOKERY, AND HOUSEHOLD ECONOMY (one credit)

Degrees

The candidate for a degree must complete the requirements for graduation in his course. Any person may undergo, at suitable times, examination in any subject, and if such person pass in all the studies and exercises of the course, he is entitled to the appropriate degree; PROVIDED, however, that at least one full year (the one immediately preceding the granting of the degree) must be spent at the University, before such degree shall be granted, and PROVIDED that examination, in every case, be held before a committee of the faculty appointed for that purpose.

For detailed information concerning requirements see the bulletins of the separate colleges and schools.

The degrees Bachelor of Arts, Bachelor of Arts in Education, Bachelor of Science, Master of Science, Master of Arts, Doctor of Philosophy, Civil Engineer, Mechanical Engineer, Electrical Engineer, Engineer of Mines, Metallurgical Engineer, Bachelor of Science in Chemistry, Bachelor of Science in Chemical Engineering, Bachelor of Science in Agriculture, Bachelor of Science in Forestry, Bachelor of Science in Home Economics, Doctor of Civil Law, Master of Laws, Bachelor of Laws, Doctor of Medicine, Doctor of Dental Surgery, and Bachelor of Pharmacy, are conferred, after recommendation by the deans of the respective colleges, by vote of the Regents.

THE UNIVERSITY STATE TEACHER'S CERTIFICATE

Graduates of the University may apply for and receive upon vote of the faculty, the University State Teacher's Certificate under the following conditions:

First: They must have maintained a good average of scholarship throughout the four years of college study.

Second: They must have the recommendation of at least one department concerned with high school studies.

Third: They must have completed one semester of Psychology and three semesters of Education, including courses 1 and 2.

This certificate by state law authorizes students to teach in the public schools of Minnesota for two years from date. After that time, upon satisfactory evidence of success, the certificate may be made permanent by the endorsement of the State Superintendent of Public Instruction and the President of the University.

Expenses

All fees for incidental, laboratory or other charges are payable
at the beginning of each semester or term.

FEES

College of Science, Literature and the Arts

	Per semester
Incidental fee, resident	\$10.00
Incidental fee, non-resident	20.00
Animal Biology, courses 1 to 4, 8, 9, 15, each	3.00
Botany, courses 1 to 16, each	3.00
Chemistry 1, 2, 3, each	5.00
Chemistry, 4	7.00
Chemistry, 5	10.00
Geology 10 and 11, each	1.00
Mineralogy, 1 and 2	3.00
Mineralogy, 3	15.00
Music, 1, 2, 3 and 8, each	4.00
Music, 4 and 5	32.00 to 64.00
Music, 6	2.00
Physics, 2, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 17, each	3.00
Physics, 7, 11, and 16, each	5.00
Drill suit, \$15.00	
Gymnasium suit, \$2.00	
Locker fees, \$1.50	
Deposit fee—military department, \$5.00	

College of Engineering

Incidental fee, resident	\$15.00
Incidental fee, non-resident	30.00

FRESHMAN YEAR

First semester	
Shop work	4.50
Second semester	
Shop work	4.50

SOPHOMORE YEAR

First semester	Per semester
Chemistry	5.00
Physics	3.00
Shop work	4.50
Biology or Botany	3.00
Second semester	
Same as for first semester.	

FOR CLASSES GRADUATING IN 1910-1911

JUNIOR YEAR

First semester	
Shop work	\$4.50
Materials Testing Laboratory	6.00
Electrical Laboratory	1.50
Physics	3.00
Second semester	
Steam Laboratory	3.00
Hydraulic Laboratory	3.00
Experimental Laboratory	4.50
Electrical Laboratory	6.00
Electric Power	3.00

SENIOR YEAR

First semester	
Electrical Laboratory	\$3.00
Fuel and Gas analysis	5.00
Electric Power	3.00
Experimental Laboratory	3.00 to 4.50
Second semester	
Electrical Laboratory	\$4.50
Electric Power	3.00
Gas Engine Laboratory	6.00
Deposit fee—military department, freshman and sophomore years . .	5.00
Drill suit	15.00

College of Agriculture

Incidental fee, resident	\$10.00
Incidental fee, non-resident	20.00
Laboratory fees same as under College of Science, Literature and the Arts.	

College of Law

Matriculation fee	\$10.00
Incidental fee (three terms) per term	20.00
Book deposit fee, per year	5.00

College of Medicine and Surgery

	Per semester
Incidental fee.....	\$50.00
Microscope fee, 1st year, 1st sem.....	4.00
2nd year, 1st sem., \$3.00, 2nd sem.....	4.00
3rd year, 1st semester.....	4.00
4th year, Clinical Microscopy.....	2.00
For elective courses.....	2.00
	Per year
Breakage fee deposit.....	\$5.00
Hospital fee (Jr. and Sr. year).....	3.00

College of Homeopathic Medicine and Surgery

Same as for College of Medicine and Surgery

College of Dentistry

	Per semester
Incidental fee.....	\$75.00
	Per year
Breakage deposit.....	5.00

College of Pharmacy

TWO YEAR COURSE

	Per year
First year.....	\$75.00
Second year.....	90.00
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	\$165.00

THREE YEAR COURSE

First year.....	\$45.00
Second year.....	55.00
Third year.....	65.00
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	\$165.00

School of Mines

FRESHMAN YEAR

	Per year
Incidental fee, resident.....	\$30.00
Incidental fee, non-resident.....	60.00
Chemical laboratory fee.....	10.00
Mineralogical laboratory fee.....	6.00
Assaying laboratory fee.....	15.00

Per year

Books	13.00
Draughting instruments	15.00
Note book and supplies	6.00
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	\$95.00

SOPHOMORE YEAR

Incidental fee, resident	\$30.00
Incidental fee, non-resident	60.00
Chemical laboratory fee	14.00
Books	8.00
Note books and supplies	2.00
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	\$54.00

JUNIOR YEAR

Incidental fee, resident	\$30.00
Incidental fee, non-resident	60.00
Steam laboratory	3.00
Trip to the mines	\$100.00 to 175.00
Books	20.00
Note books and supplies	2.00
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	\$152.00 to 227.00

SENIOR YEAR

Incidental fee, resident	\$30.00
Incidental fee, non-resident	60.00
Chemical laboratory fee	10.00
Electrical laboratory fee	5.00
Ore testing laboratory fee	10.00
Experimental laboratory fee	6.00
Books	30.00
Note books and supplies	2.00
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	\$93.00
Deposit fee	3.00

The School of Chemistry

Per semester

Incidental fee, resident	\$15.00
Incidental fee, non-resident	30.00
Shop	4.50
Assaying	15.00
Chemistry courses 1, 2, 3, 10, 14, 18, 19, 23	5.00
Chemistry courses 4, 5	7.00

	Per semester
Chemistry course 6	10.00
Chemistry courses 9, 11, 12, 13, 15, 16, 17, 20, 24.	3.00

The College of Education

Incidental fee, resident	\$10.00
Incidental fee, non-resident	20.00
Other fees same as for College of Science, Literature and the Arts.	

The Graduate School

Incidental fee,	\$10.00
Proportionate fees for less than full work.	

A fee of 25 cents per day is charged for each day of delayed registration in each of the colleges except the graduate school.

LIVING EXPENSES

The University of Minnesota has no dormitory system, and all students are thrown upon their own responsibility in obtaining boarding and rooming places.

The expense of living at the University varies greatly according to individual habits and tastes. In general the scale of expense is below rather than above that of similar institutions in the middle west and is considerably lower than that of most institutions situated in the eastern states.

Several years ago a number of young men and women, at the request of University officials, kept careful account of their expenses for the University year. The result was that the expenses of the young men ranged from two hundred and seventeen to three hundred and ninety-seven dollars for the University year. The same students earned sums varying from two hundred and thirty-seven to two hundred and seventy-two dollars. The young women reported expenses varying from one hundred and fifty to three hundred and fifty-five dollars. These figures do not include fees and, as the cost of living has increased decidedly, probably twenty-five per cent should be added to these figures to make them safe.

The students upon whose statements these figures are based were representative students; they were not extravagant nor did they deny themselves unduly to get along. While students can live within the figures given above, they would not, owing to the increased cost of living, be able to live as comfortably nor to have as many privileges as these students had.

Meals can be had at prices ranging from three dollars per week to as high as the student can afford to pay. In private families board ranges from three to five dollars.

Furnished rooms vary in price from eight to twenty dollars per month. Two students rooming together would of course reduce this expense. It

is sometimes possible for a student, rooming alone, to secure a good room at an expense but little higher than when two room together; but such chances are the exception and not the rule. New students will find that they will be more likely to secure comfortable rooms and suitable board if they will consult the general secretary of either the Young Men's or Young Women's Christian Association immediately upon arrival at the University, or if they will correspond with these officers before coming to the University.

The student who learns some trade before coming to the University has a great advantage over the student who has to earn his money by ordinary manual labor. Students have earned their whole expenses while attending the University and have made good records at the same time. Other students have done so much work that they have not been able to keep up their studies, and have thus missed the one thing for which they were attending the University.

If it is possible for the student to have a part of his expenses paid, he should not attempt to earn his way entirely by his own exertions. It is a comparatively easy thing for a young man to earn half his living while attending the University and yet do good work in his classes. Students who want work seldom fail to find it. In coming to the University, the student should bring enough money with him so that he can live comfortably for a few weeks until he can find something to do.

Students who desire advice and assistance in securing a position to help pay their expenses should confer with the Secretary of the Y. M. C. A. at the University.

A pamphlet has been published containing five papers (one by a young woman) relating actual experiences of students who have made their way through the University. Students who contemplate making their own way through college will find here stated some very interesting and encouraging facts. A copy will be sent free to any address upon application.

Degrees Granted in 1908

Total, 553

THE COLLEGE OF SCIENCE, LITERATURE AND THE ARTS

BACHELOR OF ARTS—214

Aneta Agnes Anderson, Maple Hill, Iowa.	Carl T. Ebeltoft, Lake Park.
Francis F. Anderson, St. Paul.	Marjorie Edwards, Minneapolis.
Theodora Henrietta Anderson, Montevideo.	Edwin G. Eklund, Moorhead
Tryphena Rebecca Anderson, Montevideo.	Janet Grace Elliott, Minneapolis.
Mary E. Armstrong, Minneapolis.	Elmer W. Elmquist, St. Paul.
Franz A. Aust, Minneapolis.	Margaret Alden Elwell, Minneapolis.
Edwin Aygarn, Choice.	Albert Grant Evans, Duluth.
Albert Leroy Aylmer, Baltimore, Md.	Minnie Faegre, Flandreau, S. D.
Marion Louise Barber, Minneapolis.	Edith L. Farwell, Zumbrota.
Emma A. Beckman, Minneapolis	Agnes Esperance Feeny, St. Paul.
Laura Hall Benz, St. Paul.	Murlen Fellows, Minneapolis.
Vera Doris Billings, St. Paul.	Alice Maude Finch, Clinton Falls.
Naneen Mary Blanchard, St. Paul.	Kate Maud Firmin, Minneapolis.
Guy Coe Bland, Anoka.	Lou Burrows Fleming, St. Paul.
Nina Mae Blossom, Algona, Iowa.	Marguerite Beryl Fleming, St. Paul.
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Mildred Brown, Minneapolis.	Grace L. Gaghagen, Minneapolis.
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Vivian G. Colgrove, Minneapolis.	Fannie Elizabeth Gordinier, St. Paul.
Lillian Edith Colter, St. Paul.	Kate Greeley, Stillwater.
Ruth Marian Colter, St. Paul.	Alice Evangeline Green, Minneapolis.
Jennie G. Craven, Faribault.	Florence Lavina Grime, Minneapolis.
William Howard Crawford, Hampton, Ia.	Ella Josephine Halvorson, Dawson.
Helen Sherwood Cummings, St. Paul.	Jack Ellis Haynes, St. Paul.
Fay Cuzner, Minneapolis.	Julie Hille, Fergus Falls.
Juanita H. Day, St. Paul.	Emma Mae Hillesheim, Sleepy Eye.
Florence D. Deal, Truman.	Vinnie Hitchings, Sutherland, Iowa.
Harold C. Deering, Minneapolis.	Minnie C. Hoffman, St. Paul.
Robert Lane Deering, Minneapolis.	Julia Amanda Hoken, Minneapolis.
Margarethe Denfeld, Duluth.	Lorena Hopkins, Chinook, Mont.
Kathryn Dougherty, Mankato.	Inez Ianthe Hovey, Minneapolis.
Anastasia Doyle, St. Paul.	Ida Elizabeth Howe, Racine, Wis.
Lloyd L. Duxbury, Caledonia.	Lura Claire Hutchinson, Minneapolis.

- Rewey Belle Inglis, Minneapolis.
 Florence Kimball Jenks, Seattle, Wash.
 Anna Josephine Johnson, Minneapolis.
 Anna Marie Johnson, Crookston
 Edward Whittemore Johnson, Rockford.
 Ruth Revere Johnson, Minneapolis.
 Thekla Eugenia Johnson, Lake City.
 Florence Jones, Gaylord.
 William Moore Jones, Yanceyville, N. C.
 Monica C. Keating, St. Paul.
 Margaret M. E. Kelly, St. Paul.
 Anne Kennedy, St. Paul.
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 Arnold Johnson Lien, Delavan.
 Ingebrigt L. Lillehei, Luverne.
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 Jessie F. Lockman, Minneapolis.
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 Stella May Lumley, Lanesboro
 Joseph E. Lunn, Carlton.
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 Maud Hester Lyon, Hastings.
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 George Albert McGarvey, Minneapolis.
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 Dora McGuigan, Millville.
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 Sara Thompson Marshall, Minneapolis.
 Josephine Agnes Martens, Minneapolis.
 Robert Lyon Meech, Minneapolis.
 Alice Fowle Melony, Minneapolis.
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 Hilda Amelia Miller, St. Paul.
 Mabel F. Millie, Minneapolis.
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 Arthur Alfred Morse, Minneapolis.
 Frank Wilbur Mottley, Red Wing.
 Elmina Nesta, Minneapolis.
 Mary Margaret Newton, St. Paul.
 Marion Nordbergh, Minneapolis.
 Elsa Regina Nordin, St. Paul.
 Inez J. F. Norlander, St. Paul.
 Emma Flora O'Brien, St. Paul.
 Didrick John Olson, Belview.
 Matthias Norberg Olson, Belview.
 Catherine E. Osia, Humboldt, Iowa.
 Hildegard L. E. Ott, Minneapolis.
 Orlando E. A. Overn, Albert Lea.
 Andrew H. Palmer, Minneapolis.
 James W. Papez, Hector.
 Florence Eula Paul, Minneapolis.
 Albert Sanford Peterson, Wheaton.
 Paul Willis Peterson, Minneapolis.
 Bernard Pettersen, St. Paul.
 Aura I. Phelps, Minneapolis.
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 Walter Clarence Robb, Minneapolis.
 Signe Aurora Rosdahl, Wheaton.
 Claude Willard Rossman, Minneapolis.
 Honore Veronica Rouse, Minneapolis.
 Herbert C. Rowberg, Hanley Falls.
 Olive Madge Runey, Minneapolis.
 Maurice E. Salisbury, Minneapolis.
 LeRoy Woodworth Sanford, Minneapolis.
 Alma Pearle Sawyer, Minneapolis.
 Mina L. Schaetzel, Minneapolis.
 Pauline G. Schmidt, Minneapolis.
 Albert Gregory Schneiderhan, Jordan.
 Emily Schons, St. Paul.
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 John Robert Schuknecht, Minneapolis.
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 Mary Eleanor Shiely, St. Paul.
 Helen Mary Simerman, St. Paul.
 Florence Alberta Sly, Minneapolis.
 Anna Margaret Smith, Minneapolis.
 Harriet L. Smith, Minneapolis.
 Irma Potter Smith, Minneapolis.
 James Russell Smith, Minneapolis.
 Winifred R. Smith, Duluth.
 Rudolph T. Solensten, Minneapolis.
 Alma L. Stake, Anoka.
 Georgina Sterling, Red Wing.
 Dorothea Stewart, Minneapolis.
 Edna Stewart, Minneapolis.
 Thomas Otto Streissguth, Arlington.
 P. A. Sveeggen, Minneapolis.
 Henry Swanstrom, Lake Park.

Abigail D. Switzer, Minneapolis.	Helen Whitney, Minneapolis.
Della Frances Thompson, Minneapolis.	Anna Whittle, Minneapolis.
Gertrude May Thompson, Minneapolis.	Sadye Whittle, Minneapolis.
Ella Bertha Thorson, Winthrop.	Charlotte Amelia Wigen, Red Wing.
Margaret H. Trimble, Minneapolis.	Susan Zenobia Wilder, Minneapolis.
Mamie E. Waddell, St. Louis Park.	Beatrice Isabelle Williams, Minneapolis.
Margaret Ellen Walker, Williston, N. D.	Mary Louise Williams, St. Louis Park.
Mary Genevieve Walston, Minneapolis.	Chester Sawyer Wilson, Stillwater
Ruby Wasser, Minneapolis.	Elizabeth Columbus Wolfe, Minneapolis.
Alice Aurelia Watson, St. Paul.	Luella M. Woodke, LeMars, Iowa.
Freda Weinstein, Helena, Mont.	Elizabeth Yerxa, Minneapolis.
	Augusta Ziegler, Minneapolis.

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Henry Bryan Dorr, Ashbury Park, N. J.	Charles G. Nordin, St. Paul.
Alf. Hoff, St. Paul.	Manford O. Oppegaard, Madison.
Carl Lyle Hobson, Hampton, Ia.	Jalmar H. Simons, Waseca.
	Frederick Joseph Souba, Hopkins.

THE COLLEGE OF EDUCATION

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Ethel Bush, Minneapolis.	V. Russell Manning, Minneapolis.
Maude Gertrude Bush, Minneapolis.	Willis Twiford Newton, Minneapolis.
Louise Kathleen Catur, Minneapolis.	Reuben W. Oakes, Worthington.
Nellie Margaret Dunivon, St. Paul.	Gustavus M. Sachs, New Prague.
	Alice Winter, Minneapolis.

THE GRADUATE SCHOOL

MASTER OF ARTS 21

Donald C. Babcock, Grand Forks, N. D.	George Rupert Eichholzer, Owatonna.
B. A. '07, Minnesota.	B. A. '07, Minnesota.
Major, Sociology and Anthropology;	Major, Political Science.
Minors, Philosophy, Psychology.	Minors, History, Economics.
Thesis, Origin and Development of Religious Experience.	Thesis, The Merit System as Applicable to the Various Administrative Departments of Minnesota.
John M. Brendal, Glenwood,	Lucius Arnold Frye, St. Paul.
B. A. '06, Luther College, Iowa.	B. A. '07, Minnesota.
Major, English; Minors, Comparative Philology, Scandinavian.	Major, Political Science; Minors, Economics, Sociology.
Thesis, Scandinavian Influence upon English.	Thesis, A Suggested Method of Controlling the Public Service Corporations of Minnesota.
Ernest J. Colberg, St. Peter.	Grace Mitchell Groat, Minneapolis
B. A. '06, Gustavus Adolphus	B. L. '99, Minnesota.
Major, English; Minors, Scandinavian, Latin.	Major, English; Minors, French, Philology.
Thesis, The Dramas of August Strindberg; Some Aspects of Their Ideas and Their Technic.	Thesis, The Psychology of English Rhythms.

- Howard H. Hare, Minneapolis.
B. A. '07, Minnesota.
Major, History; Minors, Philosophy, Greek.
Thesis, The Transition from a Provincial to a State Government in New Hampshire.
- Martin Hegland, St. Anthony Park.
B. A. '04, St. Olaf.
Major, English Philology; Minors, Education, Philosophy.
Thesis, An Historical and Semasiological Study of Some Synonyms, Nouns, Verbs, and Adjectives Denoting Pleasure.
- Minnie Louise Hills, St. Paul.
B. A. '07, Minnesota.
Major, English; Minors, Education, Sociology.
Thesis, A Comparison of Milton and Shakspeare as Thinkers and Writers.
- Albert Eddy Julien, Braham.
A. B. '03, Hamline.
Major, Neurology; Minors, Physiology, Pathology and Bacteriology.
Thesis, The Intrinsic and Efferent Fibers of the Cerebellum.
- Homer B. Latimer, Minneapolis.
B. A. '07, Minnesota.
Major, Animal Biology; Minors, Animal Biology, Botany.
Thesis, The Lateral Line of Polydon Spathula.
- Edward M. Lehnerts, Minneapolis.
B. S. '02, Pennsylvania.
Major, Education; Minors, Botany, Geology.
Thesis, The Teaching of Geography.
- Alice M. Misz, St. Paul.
B. A. '07, Minnesota.
Major, Botany; Minors, Animal Biology, Geology.
Thesis, A Revision of the North American Species of Vaccinium.
- Frank F. Grout, Minneapolis.
B. S. '04, Minnesota.
Major, Geology; Minors, Chemistry, Physics.
Thesis, The Granites and Associated Quartz Basalts of Stearns Co., Minn.
- Migio Miyazaki, Tokio.
B. A. '02, Waseda University, Japan.
Major, Philosophy; Minors, Sociology, Education.
Thesis, Japanese Morality, a Criticism.
- Sedona Fesenbeck Nelson, Minneapolis.
B. A. '04, Michigan.
Major, English; Minors, German, Philosophy.
Thesis, Shakspeare in German Literature.
- Leonard H. Pryor, Fairmont.
B. A. '02, Minnesota.
Major, Education; Minor, Psychology.
Thesis, A Practical Teaching of Secondary Mathematics.
- Rasmus S. Saby, Radcliffe, Iowa.
B. A. '07, Minnesota.
Major, Political Science; Minors, Philosophy, Psychology.
Thesis, Early Railroad Legislation in Minnesota.
- Conrad G. Selvig, Rushford.
B. A. '07, Minnesota.
Major, Education; Minors, Psychology, Sociology.
Thesis, Federal Aid to Schools.
- Emma White Shellenberger, St. Anthony Park.
Ph. B. '00, Iowa.
Major, English; Minors, French, German.
Thesis, Usage and History of English Idiom.
- Theodore T. Stenberg, Ormsby.
B. A. '06, Minnesota.
Major, English; Minors, Psychology, Education.
Thesis, The Function and Value of the Stage.
- Mary C. Van Wert, Minneapolis.
B. A. '05, Minnesota.
Major, Animal Biology; Minors, Botany, Geology.
Thesis, A Contribution to the History of Entomology in the United States.

MASTER OF SCIENCE 2

- John Wilson, Minneapolis.
B. S. '03, Wisconsin.
Major, Sanitary Engineering; Minors, Bacteriology, Reinforced Concrete.
Thesis, Sewage System and Disposal Plant at the State Agricultural School and Experiment Station.

DOCTOR OF PHILOSOPHY 3

- Henry Anton Erikson, Minneapolis.
B. E. E. '96, Minnesota.
Major, Physics.
Minors, Physics, Mathematics.
Thesis, The Ionization of Gases at High Pressures.
- Frederick C. Miller, St. Paul.
B. A. '03, M. A. '07, Minnesota.
Major, Political Science; Minors, History, Geology.
- Thesis, History and Organization of the Police.
- Olaf M. Norlie, Atwater.
B. A. '98, St. Olaf, M. A. '01, Wisconsin.
Major, English; Minors, Education, Scandinavian.
Thesis, The Principles of Expressive Reading, a Study of the Human Voice.

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS

CIVIL ENGINEER 29

- J. Wesley Ash, Grand Forks, N. D.
Oscar J. Bergoust, Tacoma, Wash.
LeRoy F. Borrowman, Stillwater.
Harry E. Brenchley, Minneapolis.
John Walter Comstock, Minneapolis.
Arthur Norman Dallimore, St. Paul.
William Fred Doeltz, Jr., Minneapolis.
Henry Knox Dougan, Minneapolis.
Douglas R. Fleming, St. Paul.
Pierce Powers Furber, Minneapolis.
Hugh Newton Gage, Winona.
Andrew P. Hnstad, Granite Falls.
Herbert Hamilton Knowlton, Minneapolis.
William Louis Krauch, St. Paul.
Fred C. Lang, Austin
- Dwight Webster Longfellow, Minneapolis.
Harry John McCall, Minneapolis.
Andrew A. McCree, St. Paul.
Clarence Ward Mowery, Northfield.
Lewis Magnus Norelius, Luverne.
Day Ira Okes, Minneapolis.
Melvin Samuel Olsen, Spring Valley.
John Quinn, Minneapolis.
Charles N. Robertson, Sleepy Eye.
Edward C. Schlattman, Alberta.
George William Walker, Minneapolis.
Gustaf Frederick Widell, Mankato.
Roy Willis, St. Paul.
Oscar Frederick Wodrich, Dubuque, Ia.

MECHANICAL ENGINEER 16

- Ole Andreas Anderson, Hawley.
Stanley Eugene Bingham, New Ulm.
Halstad Powell Councilman, Minneapolis.
Richard Ferguson Cox, Graceville.
Harvey Cole Estep, Minneapolis.
Frank R. Fleming, St. Paul.
Hobart Dickinson Frary, Minneapolis.
Stanley Gordon Harwood, Minneapolis.
- Percival Hetheron, Minneapolis.
Thomas C. Morris, Minneapolis.
Emil Francis Norelius, Luverne.
Clyde Wood Norton, Lisbon, N. D.
George T. Peterson, New Ulm.
George Walter Priedeman, St. Paul.
James Walsh, Northfield.
Erwin L. F. Weber, Helena, Mont.

ELECTRICAL ENGINEER 25

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Alfred Bachrach, Faribault.
George J. Brown, Minneapolis.
Robert J. S. Carter, Austin
James William Casberg, Minneapolis.
Neil Currie, Jr., Minneapolis.
Alfred Richard Frahm, Rochester.
Glenn H. Hoppin, Minneapolis.
Henry Hovelson, Minneapolis.
Roy Kauffman, Minneapolis.
Alfred Benjamin King, Clark, S. D.
Allan Lindsay McAfee, St. Paul.
Frank Joseph Pancratz, Perham.
- Clarence Alfred Peterson, Blooming Prairie
Robert Shaffer Prentice, Minneapolis.
Wm. F. H. Schildt, Hastings.
Alfred Walter Schoepf, Appleton.
Francis George Scobie, Duluth.
Leonard B. Sperry, Wasioja.
Percy Granville Sturtevant, Detroit.
George Peter Svendsen, Minneapolis.
Frank Swanstrom, Lake Park.
Oliver Sweningsen, Austin.
William Mathias Weibeler, Belle Plaine.
Louis Peter Zimmerman, Waseca.

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Robert N. King, Minneapolis

Louis Williams McKeehan, Minneapolis.
Harry Burgess Roc, St. Paul.
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ENGINEER OF MINES 15

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James Alexander Cullyford, Duluth.
Christen Frederick Dahl, St. Hilaire.
William Albert Deichen, St. Paul.
Frank Raymond Edwards, Minneapolis.
William Robert Goodwin, Minneapolis.
John Alden Grimes, Minneapolis

Ole G. Hoaas, Fertile.
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Arthur Knickerbocker, Staples.
Alfred Monroe Locke, Minneapolis.
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Andrew Peterson, Red Wing.
Joseph S. Peterson, Minneota.
John Lawrence Strong, St. Paul.

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Allen Harold Porter, Minneapolis.
Oric Ogilvie Whited, Jr., Minneapolis.

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May Erwin, St. Paul.

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BACHELOR OF SCIENCE—In Forestry 1

Georges de S. Canavarro, Honolulu, Hawaii.

THE COLLEGE OF LAW

MASTER OF LAWS 6

Herman Mathew Feroe, LL. B. Minne-
apolis.
Elias Johnson Lien, LL. B., St. Paul.
Albert W. Mueller, LL. B., New Ulm.

Anthony J. Praxel, LL. B., Minneapolis.
Josephine Schain, LL. B., Minneapolis.
Wadsworth A. Williams, LL. B., Minne-
apolis.

BACHELOR OF LAWS 86

Lawrence Russell Allison, Minneapolis.
James Bradford Baker, Brownston,
Reinhold K. Batzer, Royalton.
Herman J. Bott, Minneapolis.
Marcus Edward Brown, St. Paul.
Edward Timothy Burk, Valley City, N.D.

Franz O. G. Jevne, Meridan, Wis.
Robt. E. Johnson, Minneapolis.
Wilbur Birch Joyce, Minneapolis.
Laurel L. Kells, Sauk Centre.
Helon Edwin Leach, Spring Valley.
Charles Emory Lockerby, Mapleton.

- Harvey B. Burk, Minneapolis.
 Edward Philip Cady, Pipestone.
 Roy English Campbell, Minneapolis.
 Harry Summers Carson, Minneapolis.
 Clifford C. Champine, Minneapolis.
 Algeron O. Colburn, Minneapolis.
 Henry J. Coleman, Minneapolis.
 Lester William Crawhall, Minneapolis.
 Walter Francis Dacey, Minneapolis.
 Murray T. Davenport, Minneapolis.
 William Henry Dempsey, Minneapolis.
 Francis Marion Dolan, St. Paul.
 William John Donohue, Minneapolis.
 David Wilfred Doyle, Great Falls, Mont.
 Reuben E. Edquist, Minneapolis.
 Abelius Eenkema, Clara City.
 Eliza P. Evans, Minneapolis.
 Frank Taggart Everhard, Minneapolis.
 Andrew Fawcett, Minneapolis.
 Milton Phillip Firestone, St. Paul.
 Willie Kerr Foster, Renville.
 David Langdon Fulton, Minneapolis.
 Leroy A. Gage, Minneapolis.
 Cassius E. Gates, Minneapolis.
 Harry Gavere, Minneapolis.
 Hammond Bey Greene, Sheldon, N. D.
 Charles William Greening, Grand Meadow.
 Benjamin Feland Groat, Minneapolis.
 William Harold Gurnee, Minneapolis.
 William Hanson Haas, St. Paul.
 Alfred Ulysses Hamrum, Franklin.
 George Norman Henderson, Red Wing.
 Harry Getchell Higgins, Minneapolis.
 Virgil Goodman Hinshaw, Minneapolis.
 Stanley B. Houck, Summit, S. D.
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 Lewis Kent Lohn, Fosston.
 Mark M. McLaughlin, Minneapolis.
 Raymond Arthur McOuat, St. Paul.
 Karl Adolph Machetanz, St. Paul.
 Charles E. H. Maloy, St. Cloud.
 Edward K. Masseur, Minneapolis.
 Francis A. Molyneaux, Jr., Winnebago.
 Russell L. Moore, St. Paul.
 Frank Leonard Morse, Minneapolis.
 James Henry Mulally, Danvers, Mass.
 Olin Cornell Myron, Vermillion, S. D.
 Jared Augustus Perkins Neal, Minneapolis.
 Severt Ambrose Nelson, Minneapolis.
 Edward Herbert Nicholas, Minneapolis.
 Frank E. Norton, Minneapolis.
 Joseph A. S. O'Gordon, Minneapolis.
 Brynjolf Oyen, Watson.
 Edward S. Pattison, Durand, Wis.
 Samuel James Radcliffe, Larimore, N. D.
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 Garfield H. Rustad, Moorhead.
 John Saari, Sparta.
 Louis Benjamin Schwartz, St. Paul.
 Spencer Judd Searls, Faribault.
 Henry B. Senn, Kasson.
 Edward Sigerfoos, Minneapolis.
 Lloyd Edgar Sigmond, Zumbrota.
 William Reed Simmons, Minneapolis.
 Henry LeFevre Smiley, St. Paul.
 William C. Smiley, St. Paul.
 Niles Madison Sorenson, Hayfield.
 Paul D. Stratton, Granite Falls.
 George Francis Sullivan, Shakopee.
 Ingman Swinland, Halstad.
 Derwood Washington, Glendive, Mont.

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 Charles Joseph Bloom, Whitehall, Mich.
 Rolland A. Bock, Pharm. C., St. Paul.
 August Edward Bostrom, B. S.,⁶ Minneapolis.
 Leon Morelle Boyd, Alexandria.
 John C. Brown, Minneapolis.
 Herbert Arthur Burns, Hutchinson.
 Henry E. Dahleen, Granite Falls.
 Frederick Alonzo Engstrom, Cannon Falls.
 John Esser, Austin.
 George Bysshe Eusterman, Lewiston.
 William Sidney Hitchings, Jr., Minneapolis.
 Edward James Johnson, St. Cloud.
 Edward John Lawrence, Marshall.
 Arvid C. Lindberg, Harris.
 William Francis Maertz, New Prague.
 Gustav Alfred Magnusson, Harris.
 James Rollin Manley, Duluth.
 Melvin Sylvanus Nelson, B. S., Dawson.
 Carl M. Roan, Minneapolis.
 Dennis E. Ryan, Shakopee.
 Clarke Sherwood Smith, Bozeman, Mont.
 Eugene Benson Stebbins, Minneapolis.

Edward Louis Fortier, Little Falls.	Arthur Clarence Strachauer, Minneapolis.
Henry Oswald Grangaard, Kindred, N.D.	George Hamilton Walker, Pawnee City, Nebr.
Ernest Eugene Hemingway, Minneapolis.	John Franklin Walker, St. Paul
Charles Norton Hensel, St. Paul.	Tolbert Watson, Cashel, N. D.

THE COLLEGE OF HOMEOPATHIC MEDICINE AND SURGERY

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	K. Ward Wilder, Minneapolis.

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Clarence C. Broderson, Mountain City, Wis.	Peter James Miesen, St. Peter.
Elmer W. Bunce, Pringhar, Iowa.	Thomas J. Moore, Chatfield.
Lauren M. Coleman, Ellendale, N. D.	Herbert A. Munns, Minneapolis.
Jesse Francis Conway, Lake City.	Charles John Olson, Hastings.
Stephen Vincent Conway, Graceville.	Harley Adolph Radermacher, Barron, Wis.
Ralph W. Countryman, Minneapolis.	Frederick Louverne Rayman, Austin.
Valentine Adolph Franta, Montgomery.	Herman C. Remele, Minneapolis.
C. Edwin Graftsland, Lake Park.	Carl L. Sandstrom, Cloquet.
Gustave Adolph Hagberg, Minneapolis.	John Earl Schapler, Pipestone.
Harry Weston Harmon, Faribault.	Leroy Christian Schmitz, Jamestown, N. D.
Francis Randall Harrison, St. Cloud.	Edwin James Simon, St. Paul.
Clifford C. Higgins, Sidney, Ohio.	Lynn R. Snyder, Lake City.
Isaac Stephenson Hull, St. Paul.	Lee Erwin Spurbeck, Two Harbors.
Meredith Jay James, Lake Crystal.	William Paul Tanner, Cannon Falls.
William Henry James, Lake Crystal.	William M. Trench, Dennison.
Joseph Johnson, Minneapolis.	Arthur A. Van Dyke, St. Paul.
Joseph Almon Kjelland, Rushford.	Abram P. Whitson, Packwaukee, Wis.
Karl G. Knoche, St. Paul.	Melville Bruce Will, Mapleton.
Harry Comegys Lawton, St. Paul.	Louis Bernard Williams, Ashland, Wis.
Daniel James Leary, Portage, Wis.	

THE COLLEGE OF PHARMACY

BACHELOR OF PHARMACY 18

Dolph Church Alcott, Lakefield.	Alf. J. Gunderson, Pelican Rapids.
Fred Monroe Bowman, Browns Valley.	George A. Holmgren, Breckenridge.
John Younglove Breckenridge, Jr., Pine City.	Edward Perry Jones, Blue Earth.
Frank A. DeWitz, Rochester.	Asa Frederick Kurth, Hendricks.
Arthur W. Eckstein, New Ulm.	Roy R. Lambert, Royalton.
Earl S. Erckenbrack, Parkers Prairie.	Arthur E. Lovdahl, Park Rapids.
Alvin LeRoy Dretchko, Winthrop.	Ingvald S. Pladson, Minneapolis.
Bernt Olaf Gronvold, Kenyon.	Richard H. Puhl, Menomonie, Wis.
	Ernest Albert Stoppel, Rochester.
	George Claude Weber, Rochester.

Honors and Prizes

Degrees With Distinction 13

IN ECONOMICS

William H. Crawford
Harold C. Deering

Arthur A. Morse
Fay N. Seaton

IN ENGLISH

Mary Alice Winter

IN GEOLOGY

Andrew H. Palmer

Edward W. Johnson

IN HISTORY

Alice G. Pope

IN LATIN

Willis T. Newton

Della F. Thompson

IN PHILOSOPHY

Elmer Elmquist

Ingebrigt Lillehei

IN SOCIOLOGY AND ANTHROPOLOGY

Albert N. Gilbertson

Degree Cum Laude 1

IN LAW

Derwood Washington

Certificate of Proficiency in Music

Awarded to Gertrude R. Hull

The '89 Memorial Prize in History

Awarded to Arnold J. Lien

The Alumni Weekly Gold Medal

Awarded to Stanley B. Houck

The Albert Howard Scholarship

Awarded to Matthias N. Olson



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